

NOAA Fisheries Implementation Plan of the FAO Code of Conduct for Responsible Fisheries

2012



U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service

**NOAA Fisheries Implementation Plan of the
FAO Code of Conduct for Responsible Fisheries**

January 2012

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I. Purpose

This document is an update of the 1997 National Marine Fisheries Service’s (NMFS) implementation plan for the United Nations Food and Agriculture Organization’s (FAO) Code of Conduct for Responsible Fisheries (Code). This updated plan identifies key innovations in NMFS’ jurisdiction or involvement that respond to the Code’s provisions for responsible and sustainable fisheries.

The action steps of this plan address the key elements of responsible and sustainable fisheries, including:

- marine fisheries resources;
- resource habitats, ecosystems and associated species;
- resource users (and allocations to resource users);
- marine aquaculture; and
- tools to meet NMFS objectives and responsibilities: fisheries science, international agreements, trade activities.

The National Marine Fisheries Service is an organization within the National Oceanic and Atmospheric Administration (NOAA). NOAA is a federal scientific agency within the United States Department of Commerce broadly focused on the conditions of the oceans and the atmosphere. NMFS is specifically responsible for the management, conservation and protection of living marine resources within the United States' exclusive economic zone (i.e., waters 3 to 200 miles offshore) and implementing a large number of international agreements for the management, conservation and protection of Living Marine Resources (LMRs).

The NMFS implementation plan is designed to meet or make major and measurable progress toward certain fundamental goals with respect to the resources and the users of those resources. These long-term goals, which are outlined in NOAA’s Next Generation Strategic Plan may be summarized and relate to the Code as follows:

NOAA Next Generation Strategic Plan, Long-term goals for Healthy Oceans	Article 2: Objectives of the Code of Conduct for Responsible Fisheries
Improved understanding of ecosystems to inform resource management decisions	promote research on fisheries as well as on associated ecosystems and relevant environmental factors; and (Article 2.i)
Recovered and healthy marine and coastal species	promote protection of living aquatic resources and their environments and coastal areas (Article 2.g)
Healthy habitats that sustain resilient and thriving marine resources and communities	
Sustainable fisheries and safe seafood for healthy populations and vibrant communities	promote the contribution of fisheries to food security and food quality, giving priority to the nutritional needs of local communities (Article 2.f)

This plan deals with the implementation of the Code in the domestic fisheries of the United States, and the provisions of this plan apply to all sectors that use or culture U.S. marine fish resources, including commercial and recreational fishermen, the marine aquaculture industry, and processors and marketers of these resources. NMFS understands the importance of domestic implementation of the Code based on the notion that 90 percent or more of world fisheries are conducted in waters under the jurisdiction of a coastal state, given that the most productive fisheries occur on continental shelves usually within national boundaries (e.g., exclusive economic zones).

Two exceptions to this emphasis on domestic implementation are the sections that deal with United Nations (UN) fisheries agreements and trade, which are included because they are either integral parts of the Code or addressed in detail in the Code.

The Code is, by definition, a voluntary instrument, and there are many themes that need to be addressed internationally as well as domestically. In fact, NMFS is involved in many initiatives to promote responsible and sustainable fisheries globally. While these activities are not discussed in this document (save the UN agreements and trade), they may be listed:

- Multilateral efforts through various fora, such as Regional Fishery Management Organizations (RFMOs), to address illegal, unreported and unregulated (IUU) fishing, bycatch of protected living marine resources (PLMRs), and shark conservation.
- Building capacity in fisheries management, fisheries observers, enforcement, bycatch reduction technologies and practices in developing nations throughout West Africa, the Caribbean, South America and Southeast Asia.
- Support for international initiatives (consultations, studies, and workshops) dealing with various trade and economic aspects of sustainable fisheries, in the Asia-Pacific Economic Cooperation (APEC) Fisheries Working Group; the Organisation for Economic Co-operation and Development (OECD) Fisheries Committee; the World Trade Organization (WTO) Committee on Trade and the Environment and the FAO Committee on Fisheries (COFI).
- Support for conferences and events on international enforcement

Implementation of the Code is achieved through NMFS' marine fisheries and marine aquaculture activities and policies, driven by legislative mandates, especially the 2006 Magnuson-Stevens Reauthorization Act (MSRA) which amended the Magnuson-Stevens Act of 1976 and Sustainable Fisheries Act of 1996, and the recently finalized, long-term NOAA Next Generation Strategic Plan.

Accordingly, elaboration of this plan proceeds from the fundamental assumption that NMFS, through its legislative mandates, strategic plans and programmatic activities, seeks to achieve practically all the same goals, or at least make significant and measurable progress toward them, as the Code.

Given the domestic focus of this document, the NMFS Implementation plan for the Code is tailored to the unique features of U.S. marine fisheries. As such, U.S. marine fisheries characteristics may not parallel those of other countries that have negotiated and adopted the Code. For that reason, other countries may not necessarily choose the same action steps as the United States in their Code of Conduct implementation plans. At the same time, it is our hope that this implementation plan will be viewed as a serious, practical, and good faith effort on the part of the U.S. Agency responsible for marine fisheries to implement the Code, and we encourage other countries to do the same.

II. Background

In the early 1990s fisheries experts became increasingly concerned about the overall state and trends in global marine fisheries. After 1989, world harvests appeared to plateau and decline irregularly; evidence increased that a large share of traditional and highly priced species were overfished or at least fully harvested; some traditional species suffered major stock declines; signs of excess capacity in the harvesting sector were everywhere; disturbingly high levels of bycatch in the capture fisheries sector caused increasing concerns; and habitat degradation, especially in the coastal environment, became a higher priority issue internationally and in many individual nations.

Fisheries analysts at FAO highlighted these issues through the publication of a series of rather pessimistic forecasts. All of these issues and concerns came together in the early 1990s when FAO issued papers in preparation for the Conference on Responsible Fishing in Cancun, Mexico in May 1992. At that meeting, it was agreed in the Cancun Declaration that FAO would sponsor and organize consultations on a code for responsible practices in fisheries, and such a document was negotiated in the following two years, and finalized in September 1995. To date, over 170 member Governments have adopted the Code.

Although the Code is voluntary, it is based upon certain rules of international law. Overall, the Code provides principles and standards for the conservation, management and development of all fisheries.

In that regard, the Code is organized in 12 articles, of which six address substantive themes:

- Article 7: Fisheries Management
- Article 8: Fishing Operations;
- Article 9: Aquaculture Development;
- Article 10: Integration of Fisheries into Coastal Area Management;
- Article 11: Post-harvest Practices, and Trade; and
- Article 12: Fisheries Research.

Two international themes that are discussed at length in the Code are: first, two UN fisheries agreements, and, second, a number of trade issues. The UN fisheries agreements deal with the regulation of high seas fishing vessels (the Compliance Agreement) and with the management of fisheries for highly migratory stocks and straddling fish stocks (the United Nations Fish Stocks Agreement). The Compliance Agreement is in fact an integral part of the Code, while the Fish Stocks Agreement includes much of the same language as the Code.

The International Plans of Action (IPOA) and Technical Guidelines for Responsible Fisheries that were developed by the FAO as voluntary instruments for member countries to implement the Code's provisions are discussed further in the UN Fisheries Agreement section of this document.

The second broad international theme—trade issues—is an objective that NMFS, in cooperation with the U.S. trade agencies, has pursued in the past and continues to promote in a number of international fora.

III. Method

The Code is a wide-ranging, comprehensive document that addresses all aspects of fisheries issues. Therefore, its scope includes marine and freshwater fisheries; wild and farmed resources; and harvesting and post-harvest operations. With respect to marine fisheries, the Code addresses most, if not all, of the chief mission areas of NMFS. The only major NMFS programmatic activity that is not addressed in a separate, detailed article is protected resources.

Before discussing the specifics of the Implementation plan of the Code, the overall NMFS record on marine fisheries and aquaculture issues must be placed in a broader and historical context. During the last three decades since the passage of our basic fisheries law, the United States has made appreciable progress in dealing with these issues, much of it based on the same fundamental principles that were later included in the Code. Since 1976, when the Magnuson-Stevens Fishery Conservation and Management Act (now known as the Magnuson-Stevens Act, MSA) was passed and implemented, the United States Government has:

- established a 200-mile fishery conservation zone, later modified and expanded as an exclusive economic zone (EEZ);
- created an entirely new fisheries management system focused on ending and preventing overfishing, driven by fishery and ecosystem management plans that are developed cooperatively by the Department of Commerce (within which NOAA resides) and the eight Regional Fishery Management Councils (Councils), of which all use annual catch limits (ACLs);
- developed 46 Fishery Management Plans (FMP) for a total of 531 stocks or stock complexes across 7 U.S. regions, including: the northeast, the southeast, the northwest, the southwest, the Alaska, the Pacific Islands, the Atlantic Highly Migratory species region;
- implemented various types of limited entry systems in many of our major commercial fisheries, such as catch shares that reduce overcapacity in fisheries;
- developed measures to better understand and manage the levels of capacity in the harvesting sector of the U.S. commercial fishing industry;
- developed definitions of overfishing and overfished for U.S. fisheries;
- implemented a variety of management measures and technological innovations to estimate and reduce bycatch;
- made important strides in habitat protection and restoration; and
- passed the National Aquaculture Act of 1980, developed FMPs for some forms of aquaculture in federal waters, and developed numerous national policies and initiatives to promote sustainable aquaculture.

In summary, important progress has been made in the last three decades in many of the substantive areas addressed in the Code. At the same time, it is clear that there is still room for improvement as far as strengthening the sustainability of our marine fisheries. In preparing this

implementation plan, NMFS has reviewed its marine fisheries strategies and legislative mandates, and prepared a forward-looking document to address its missions in these areas. NMFS has recently completed a review of its programmatic priorities through a planning process that involves both internal U.S. Government review and comment by all interested constituencies. The Next Generation Strategic Plan was finalized in December 2010 and is designed to guide the NOAA's major programmatic missions for the next 5 years.

One of the long-term goals in the Next Generation Strategic Plan is the "Healthy Oceans Goal". This goal is organized by four overarching objectives, including:

1. improved understanding of ecosystems to inform resource management decisions;
2. recovered and healthy marine and coastal species;
3. healthy habitats that sustain resilient and thriving marine resources and communities;
and
4. sustainable fisheries and safe seafood for healthy populations and vibrant communities.

These objectives are in line with those of the Code. NOAA's Next Generation Strategic Plan is the NMFS long-term plan. However, to reach or make meaningful progress toward its objectives, NMFS has to carry out a wide range of specific, mainly research and regulatory activities. Most of these activities are undertaken pursuant to our fisheries management responsibilities, as specified in the Magnuson-Stevens Reauthorization Act. This reauthorization process last took place in December 2006 with the passage of the MSRA.

Finally, NMFS is engaged in international activities in the areas of international fisheries agreements and trade, in cooperation with the Department of State and the U.S. trade agencies, that deal with issues that are taken up in the Code.

In summary, in preparing the implementation plan, we have emphasized the following:

- the requirements of Magnuson-Stevens Reauthorization Act of 2006;
- the long-term goals of the NOAA Next Generation Strategic Plan;
- President Barrack Obama's new National Ocean Policy;
- selected international activities that NMFS carries out in coordination with other U.S. Government agencies.

An examination of the items above and the Code point to nine cross-cutting themes that constitute the body of the NMFS Code of Conduct implementation plan, including:

1. Management: Healthy Fish Stocks and Overfished Stocks.
2. Overcapacity.
3. Bycatch.
4. Aquaculture.
5. Ecosystems.
6. Scientific Research and Advice
7. UN Fisheries Agreements.
8. Trade.
9. Safety at Sea.
10. Seafood Safety and Quality.

IV. Themes

1. Management: Healthy Fish Stocks and Overfished Stocks

Federal management of U.S. Fisheries is guided by the Magnuson-Stevens Act, most recently amended by the Magnuson-Stevens Reauthorization Act of 2006, which was signed by President Bush in January 2007. One of the primary mandates of the MSRA is to “end and prevent overfishing in all U.S. commercial and recreational fisheries in 2010 for stocks subject to overfishing, and 2011 for all others”. The terms overfishing and overfished are defined in the MSRA as follows: a stock or stock complex is considered overfished when its population size falls below the minimum stock size threshold (MSST); overfishing is occurring if the maximum fishing mortality threshold (MFMT) is exceeded for 1 year or more.

This same goal—to prevent and eliminate overfishing—is advocated throughout the Code, but specifically in Code Articles 6, 7 and 8 dealing with “general principles”, “fisheries management”, and “fishing operations”. The Code advises States to “prevent overfishing” and “eliminate excess fishing capacity” and to “implement management measures to ensure that fishing effort is commensurate with the productive capacity of the fishery resources”.

The implementation of the MSRA is a collaborative effort involving NMFS, eight Regional Fishery Management Councils (Councils), Interstate Marine Fisheries Commission partners, Treaty Indian Tribes and commercial and recreational fishing industries. As part of the MSRA implementation NMFS is required to report annually to Congress and the Councils on the status of U.S. fisheries (Sec. 304(e)(1)). In the latest report, released in July 2011, NMFS announced that 213 stocks (84%) are not subject to overfishing while 40 (16%) are, and 159 stocks (77%) are not overfished while 48 (23%) are.

NMFS measures progress of the sustainability of U.S. fisheries through the Fish Stock Sustainability Index (FSSI). The FSSI measures the performance of 230 key stocks and increases as additional assessments are conducted, as overfishing is ended and as stocks rebuilt to the level that provides maximum sustainable yield. This FSSI index increased from 357.5 in 2000 to 573 in 2009. This 60% increase in the FSSI index in 9 years represents significant progress in improving our knowledge of stock status and sustainably managing our fisheries.

In order to successfully implement the MSRA, NMFS is utilizing a number of approaches to help reduce and eliminate overfishing and rebuild stocks, including:

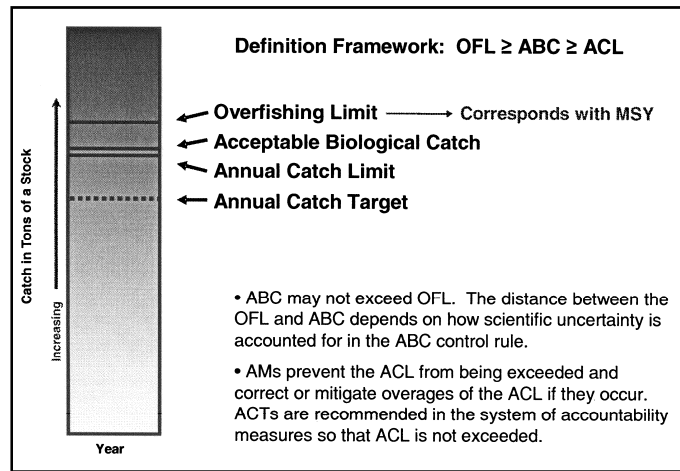
- Imposing annual catch limits (ACL);
- Working with Councils to consider market-based measures;
- Improving science and enhancing its role in decision-making;
- Integrating the environmental review process (i.e. National Environmental Policy Act of 1969, NEPA) into MSRA public processes; and
- Enhancing international cooperation.

Annual Catch Limits

With the goal of ending and preventing overfishing, the MSRA requires the Councils and NMFS to set annual catch limits (ACLs) for all U.S. fisheries managed by Federal fishery management plans (FMPs).

ACLs are the cornerstone to a new fisheries management framework. Part of this framework is depicted in the simplified rendering on the right. This new framework is intended to prevent

and eliminate overfishing by providing a safety buffer between the recommended annual catch target (ACT) of the fishery and the catch level above which overfishing begins to occur (Overfishing Limit or OFL) by accounting for scientific and management uncertainty.



Within this buffer are two intermediary but important thresholds. The first is the acceptable biological catch (ABC), which is required by law to be set below the OFL, and represents the sustainable harvest level of a stock's or stock complex's annual catch that accounts for scientific uncertainty. The second is the annual catch limit (which is required by law to be below the ABC) which defines "the level of annual catch of a stock or stock complex that serves as the basis for invoking accountability measures (AMs)". When fishing effort exceeds the ACL, AMs are triggered. AMs are designed to prevent overfishing from occurring and to adjust management if overfishing does occur. There are two basic types of AMs that can be triggered following an ACL exceedence: preventive in-season management actions (e.g. in-season fishery closure if the target catch limit has been reached) and corrective management actions (e.g. overage payback in the next fishing year). To summarize, the relationship between these different terms/thresholds as: $OFL \geq ABC \geq ACL \geq ACT$.

The new ACL framework marks an important departure from previous fisheries management systems. Before the MSRA, the total allowable catch (TAC) was the "annual recommended or specified regulated catch for a species or species group". Although the TAC-system is similar to the ACL-system in that it is based on the range of acceptable biological catch, the ACL system is different in that it accounts for both scientific and management uncertainty (i.e. the degree of variation between the OFL and ABC, and ACL and ACT, respectively) and that it ends overfishing (by legally restricting the ACL to never exceed the ABC). In doing so, U.S. fisheries management has moved from effort controls (e.g. closures, days at sea, etc.) to specific output based measures.

Market-Based Management Approaches

Section 303(a) of the MSRA promotes additional tools for fisheries managers to achieve the Act's objectives, including market-based management approaches. Market-based management tools generally refer to limited access privilege programs that have the effect of reducing the "open access" nature of traditional fisheries. Limited access privilege programs have proven to be powerful tools in rebuilding underperforming fisheries and maintaining long term productivity. More on this subject will be discussed in the section on overcapacity.

Improving Science

Improving science for the purposes of fisheries management is another key mandate in the MSRA. As part of this mandate, Councils' Scientific and Statistical Committees (SSC) have been assigned a larger role. Specifically, SSCs establish the ABC of a fishery which ACLs cannot exceed. Additionally, peer review processes are being enhanced, new regional pilot programs for ecosystem research are being developed, recreational fisheries data collection has been made a high priority and commercial fish processing and economic data are now required in FMPs. The section entitled Fisheries Science provides further updates on this subject.

Integrating Environmental Review Process

The MSRA identified the goal of better integrating NEPA (National Environmental Policy Act of 1969) and the fisheries management process in order to streamline environmental reviewing. As such, NMFS is working with the Regional Councils and the Council on Environmental Quality (CEQ) to revise procedures for compliance with NEPA.

Enhancing International Cooperation

The MSRA pays an unprecedented level of attention to international fisheries. It calls for the Secretary of Commerce to work multilaterally through various fora, such as regional fishery management organizations (RFMOs), to address illegal, unregulated and unreported (IUU) fishing, bycatch of protected living marine resources (PLMRs), and shark conservation and management. NMFS is the implementing agency within the Department of Commerce for the authorities and responsibilities under the MSRA.

Also, in fulfillment of requirements under the international provisions of the MSRA, NMFS has prepared its second Biennial Report to Congress, which identifies nations whose fishing vessels are engaged in IUU fishing.

2. Overcapacity

Overcapacity in fisheries remains a central challenge to implementing the primary goal of the MSRA—to end and prevent overfishing—as well as to meet MSFCMA requirements for achieving optimum yield. Overcapacity (or “excess capacity” as referred to in the Code) generally refers to the physical capacity to harvest more than the allowed target level and overcapacity is often the result of overcapitalization (i.e. excessive investments in vessels and gear). Overfishing, on the other hand, as defined by NOAA Fisheries, pertains to the use of vessels and gear in unsustainable harvesting rates. Overcapacity will tend to lead to overfishing unless there is a strict management regime in place. In other words, overcapacity has the potential to create overfishing. The overcapacity issue is an important theme in the Code, especially in Articles 6 and 7.

National Ocean Policy

A National Policy for the stewardship of the oceans, coasts and the Great Lakes was established by Presidential Executive Order on July 19, 2010. This “National Ocean Policy” is aimed at reducing overcapacity by, most importantly, establishing an inter-agency mechanism to coordinate agencies that have various responsibilities in ocean management, initiating a catch shares policy and authorizing a NOAA led initiative to set up a framework to coordinate coastal and marine spatial plans in nine different regions across the United States.

Catch Shares

To rebuild overfished stocks and reduce overcapacity where it exists (as well as promote safety and fishery conservation and management), the MSRA includes provisions authorizing NMFS to develop limited access privilege programs (LAPPs). LAPPs are a means to distribute and enforce exclusive percentages of the annual catch limit (ACL) among participants. Taken together, ACLs and LAPPs combine the positive biological benefits of a firm cap on fishery removals with the additional benefits of achieving important economic and social objectives necessary to support sustainable fisheries, without the negative aspects of the race-for-fish that ACLs lead to when used exclusively.

Catch shares are a generic term in the United States for a range of fishery management programs that includes specific programs defined in law such as LAPPs, individual fishing and transferable quotas (IFQs and ITQs) and other exclusive allocative measures. Catch shares allocate a specific portion of the total allowable fishery catch to individuals, cooperatives, communities, or other entities including sectors. In practice a fisherman typically receives a secure but temporary privilege (not entitlement in U.S. parlance) to harvest a specific quantity or percentage of fish. The recipient is obligated to limit catch to no more than their allocation. Catch shares have been proven to be powerful tools in rebuilding underperforming fisheries and maintaining long term productivity in the United States. Catch shares have already been

implemented in 14 fisheries managed by six fishery management councils from Alaska to Florida and are being developed in additional fisheries. In the United States, catch shares are helping to eliminate overfishing and achieve annual catch limits, improve fishermen’s safety and profits, and reduce the negative biological and economic effects of the race for fish that develops with some traditional fishery management.

List of Existing and Pilot Catch Share Programs in six regions

Pacific	North Pacific	Gulf of Mexico	South Atlantic	Mid Atlantic	New England
<ul style="list-style-type: none"> • Pacific Sablefish Permit Stacking (2001) • Pacific Coast Groundfish Trawl Rationalization (2011) 	<ul style="list-style-type: none"> • Halibut and Sablefish (1995) • Western Alaska CDQ (1992) • Bering Sea AFA Pollock Cooperative (1999) • Bering Sea King and Tanner Crab (2005) • Central Gulf of Alaska Rockfish Pilot (2007) • Groundfish (non-Pollock) Cooperatives (2008) 	<ul style="list-style-type: none"> • Red Snapper (2007) • Grouper and Tilefish (2010) 	<ul style="list-style-type: none"> • Wreckfish (1991) 	<ul style="list-style-type: none"> • Surfclam and Ocean Quahog (1990) • Golden Tilefish (2009) 	<ul style="list-style-type: none"> • Georges Bank Cod – Hook Gear (2004) • Georges Bank Cod – Fixed Gear (2007) • Atlantic Sea Scallops IFQ (2010) • New England Multispecies Sectors (2010)

Catch Shares Policy

In 2010, NMFS released a Catch Shares Policy, pursuant to the National Ocean Policy and supported by President Obama and NOAA’s Administrator Dr. Jane Lubchenco that encourages the consideration and adoption of catch shares wherever appropriate in fishery management and ecosystem plans and amendments. NMFS will also support the design, implementation, and monitoring of catch share programs.

Another means of addressing overcapacity is a capacity reduction program. These programs are also referred to as “buybacks”. NMFS has the authority to conduct a fishing capacity reduction program if funds are provided and it is determined that such a program is necessary to prevent or end overfishing, rebuild stocks of fish, or achieve measurable or significant improvements in the conservation and management of the fishery. Under the authority of this section, the Secretary (i.e., NMFS) may buy back vessels and/or fishing permits in order to obtain the maximum sustained reduction in fishing capacity at the least cost and in a minimum period of time. So far NMFS has already made the following vessel and permit buybacks:

- Bering Sea Aleutian Island Pollock buyback in 1998, which removed 9 large catcher-processors and 17 permits;
- Pacific Coast Groundfish buyback in 2004, which removed 91 vessels and 239 permits;
- Bering Sea Aleutian Island Crab buyback in 2005, which removed 25 vessels and 62 permits;
- Bering Sea Aleutian Island Non-Pollock Groundfish–Long-line Catcher Processors buyback in 2006, which removed 3 vessels and 12 permits.

NMFS is continuing this form of fishing capacity reduction in considering further vessel and permit buybacks in the Southeast Alaska Purse Seine Salmon Fishery, the Bering Sea Aleutian Island Non-Pollock Groundfish Fishery, the Gulf of Mexico Reef Fish Fishery, the Northeast Multispecies Groundfish Fishery and the New England Lobster Fishery.

Coastal and Marine Spatial Planning

Another key element of the National Ocean Policy is its authorization for a “Framework for Effective Coastal and Marine Spatial Planning (CMSP)”. CMSP is aimed at transforming ocean management and governance in U.S. waters by reducing or eliminating conflicting uses of the ocean and ecosystems through a science- and ecosystem-based planning process.

Implementation of CMSP is a top priority for NOAA, as identified in its Next-Generation Strategic Plan. The national policy establishes nine regional planning bodies to implement the CMSP framework. While membership on each regional planning body is reserved for federal, state, and tribal entities with authorities relevant to CMSP, the policy is explicit about the importance of stakeholder participation throughout the key steps of the process and implementation of CMSP. NOAA has personnel on the ground, in the air, and on the water in each of the nine regions outlined in the framework. These various regional staffs—ranging from climate services administrators to fishery managers to port navigation managers—will play important roles as NOAA’s representatives on the regional planning bodies. In addition to being experts on oceans, coasts, and Great Lakes, they will bring a wealth of experience and knowledge of community stakeholders from their involvement in regional networks.

3. Bycatch

The MSRA 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, but not fish released alive under a recreational catch and release fishery management program”. Bycatch mortality can decrease the sustainability of a fishery and the net benefits provided by that fishery.

Bycatch can impede efforts to achieve sustainable fisheries in two ways: First it increases the uncertainty concerning total fishing mortality which in turn makes it more difficult to assess the status of stocks, to set the appropriate levels of optimum yield (OY) and overfishing, and to ensure that the OYs are attained and that the overfishing levels are not exceeded. Second, bycatch often precludes other more productive uses of fishery resources by increasing total fishing mortality. Bycatch also has other repercussions on mortality of non-target species, such as protected species of sea turtles and marine mammals, which subsequently impact ecosystem diversity and function.

As such, numerous Congressional mandates and NOAA strategic plans call for the monitoring and or reduction of bycatch. Similar objectives are echoed in the Code: Articles 7 and 8 (fisheries management and fisheries operations, respectively) and recommend that “States take appropriate measures to minimize waste, discards, catch of non-target species, both fish and non-fish species, and impacts on associated or dependent species, in particular endangered species”. These objectives were further elaborated in the FAO’s International Guidelines for Bycatch Management and Reduction of Discards.

Under National Standard 9, the MSRA requires Fishery Management Plans (prepared by any Fishery Management Council or the Secretary, i.e., NMFS) 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, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch. To fully comply with National Standard 9, NMFS issued a National Bycatch Strategy to address issues related to the management of bycatch within the Nation’s fisheries, in March 2003. The major objectives of the Strategy were as follows:

1. Assess progress toward meeting the national bycatch goal, its supporting objectives and strategies, and regional recommendations as set forth in Managing the Nation’s Bycatch, which includes meeting the bycatch reduction requirements of relevant statutes including national standard 9 of the MSA, Section 118 of the MMPA, and the take prohibitions of the ESA.
2. Develop a national approach to a standardized bycatch reporting methodology.
3. Implement the national bycatch goal through regional implementation plans.
4. Undertake education and outreach involving cooperative efforts at the regional level (and other levels as appropriate) by fishery managers, scientists, fishermen, and other stakeholders to develop effective and efficient methods for reducing bycatch.

5. Utilize existing partnerships and develop new international approaches to reducing bycatch of living marine resources including fish stocks, sea turtles, marine mammals, and migratory birds, where appropriate.
6. Identify new funding requirements to effectively support the NMFS National Bycatch Strategy on an ongoing basis.

The NOAA Next Generation Strategic Plan also stresses the goal of decreased bycatch of protected species, target and non-target species and full implementation of the provisions of the MSRA to combat illegal, unreported, and unregulated fishing and bycatch of protected living marine resources in international fisheries.

NMFS Initiative Accounts for U.S. Bycatch

In 2006, NMFS launched an effort to fully implement the requirements of the MSRA. More specifically, this initiative, which is ongoing, aims to obtain: (1) better information concerning the levels of bycatch, and the biological, ecological, social and economic effects of bycatch, (2) better information concerning the biological, ecological, oceanographic, social and economic factors that affect the levels of bycatch and (3) a better integration and use of such information. On September 22, 2011 NOAA Fisheries publicly released the first edition of the National Bycatch Report (NBR) http://www.nmfs.noaa.gov/by_catch/. The National Bycatch Report provides the first nation-wide compilation of bycatch estimates in U.S. commercial fisheries by NOAA Fisheries, using 2005 data to establish a baseline for future comparison. The National Bycatch Report also provides information on sampling and estimation methods, provides an objective framework for evaluating the quality of bycatch estimates, and establishes performance measures for monitoring improvements to bycatch data quality and estimates over time. The National Bycatch Report builds upon the conservation and management strategies articulated in previous NOAA Fisheries publications such as *Managing the Nation's Bycatch and Evaluating Bycatch*, and mandated under the Magnuson-Stevens Act, Marine Mammal Protection Act, and Endangered Species Act.

The National Bycatch Report contains the first comprehensive description of the nation's commercial fisheries, identifying 274 federal, state, international, and tribal fisheries. Bycatch estimates contained in the report are based on 2005 data, the most recent year of data available when the report was initiated. The report contains bycatch estimates for 81 federal commercial fisheries as well as 480 fish, 54 marine mammal, 19 sea turtle, and 28 seabird bycatch estimates.

This is the first in what is planned to be a series of reports. Future versions of the National Bycatch Report will include periodic updates of bycatch estimates for federal fisheries, as well as estimates for state, international, and tribal fisheries where data are available.

Section 316 of MSRA: Bycatch Reduction Engineering Program (BREP)

The MSRA also includes requirements to build on and improve current bycatch reduction efforts through the establishment of a new program and processes. Section 316 of the MSRA calls for NMFS to establish a Bycatch Reduction Engineering Program (BREP), including grants to develop technological devices and other conservation engineering changes designed to minimize bycatch, seabird interactions, bycatch mortality, and post-release mortality in federally managed fisheries. The BREP was implemented in 2008, following a Policy Directive from NOAA's Acting Assistant Administrator for Fisheries. The BREP has made significant progress to develop technological devices and other conservation engineering designed to minimize bycatch, including improvements to bycatch reduction devices (e.g. weak hooks that reduce tuna bycatch) and turtle excluder devices in Atlantic and Gulf of Mexico trawl fisheries, gillnets in Northeast fisheries, and trawls in Alaska and Pacific Northwest fisheries.

Section 118 of the Marine Mammal Protection Act (MMPA)

Section 118 of the MMPA (1972) also calls for NMFS to develop and implement take reduction plans (TRPs) to assist in the recovery or prevent the depletion of strategic marine mammal stocks that interact with Category I and II fisheries (Category I: frequent incidental mortality or serious injury of marine mammals; Category II: occasional incidental mortality or serious injury of marine mammals). The MMPA mandates that each fishery be classified by the level of serious injury and mortality of marine mammals that occurs incidental to each fishery as reported in the annual Marine Mammal Stock Assessment Reports for each stock.

U.S. International Efforts to monitor and reduce bycatch

Section 403 of the MSRA requires the Secretary of Commerce (i.e., NMFS) to identify nations whose vessels are engaged in the bycatch of protected living marine resources (PLMR's) under specified circumstances and to certify that these nations have 1) adopted regulatory programs for PLMR's that are comparable to U.S. programs, taking into account different conditions, and 2) established management plans for PLMR's that assist in the collection of data to support assessments and conservation of these resources. If a nation fails to take sufficient corrective action and does not receive a positive certification, fishing products from that country may be subject to import prohibitions into the United States.

Other International efforts to reduce bycatch in which the U.S. has played an important part include the 1995 United Nations Fish Stocks Agreement (UN FSA) and several RFMO measures. For example, IATTC adopted a resolution in 2007 to mitigate the impact of tuna fishing on sea turtles by implementing FAO guidelines to reduce the bycatch, injury, and mortality of sea turtles in fishing operations and to ensure the safe handling of all captured sea turtles. And WCPFC adopted a conservation and management measure in December 2008 requiring commission members, cooperating non-members, and participating Territories (CCMs) to

implement the FAO guidelines as appropriate, ensure safe handling of all captured sea turtles to improve survival, report on sea turtle interactions, use proper mitigation techniques, and utilize safe handling and release equipment, among other things (CMM 2008-03). The U.S. helped to champion both of these resolutions.

NMFS is also involved in capacity building efforts in West Africa, Southeast Asia and the wider Caribbean such as fishery management and fisheries observer training that indirectly help reduce world fisheries bycatch, by promoting the same sustainable fishing methods as advocated in the Code.

4. Aquaculture

Aquaculture is the propagation and rearing of aquatic organisms in controlled or selected aquatic environments for any commercial, recreational, or public purpose. Aquaculture includes the production of seafood from hatchery fish and shellfish which are grown to market size in ponds, tanks, cages, or raceways. Stock enhancement is a form of aquaculture in which hatchery fish and shellfish are released into the wild to rebuild wild populations or coastal habitats such as oyster reefs. Aquaculture also includes the production of ornamental fish for the aquarium trade, and growing plant species used in a range of food, pharmaceutical, nutritional, and biotechnology products.

Approximately 86 percent of the seafood consumed in the United States is imported, about half of which is sourced from aquaculture (Fisheries of the United States 2009). In 2009, the FAO reported that aquaculture crossed the threshold of providing more than half of all seafood consumed worldwide. U.S. aquaculture provides only about 5 percent of the seafood consumed in the United States (including both fresh and marine aquaculture). Driven by imports, the U.S. seafood trade deficit has grown to over \$10 billion annually – the highest it has ever been.

The existing domestic marine aquaculture industry is mainly comprised of shellfish farming, but also includes farming of finfish and algae in coastal waters and hatchery production of fish and shellfish to replenish stocks of important commercial, recreational, and endangered species and to restore marine habitat (e.g., oyster reefs). Emerging technologies for marine aquaculture include land-based closed-recirculating systems, marine algae production technologies for biofuels and non-food products, systems that integrate different types of aquaculture or combine aquaculture with other uses, and systems in exposed open-ocean waters.

Growing U.S. and worldwide demand for seafood is projected to continue as a result of increases in population and consumer awareness of seafood's health benefits and a rapidly increasing middle class in nations such as China and India. Because wild stocks are not meeting increased demand even with rebuilding efforts, future increases in domestic seafood supply are likely to come either from foreign aquaculture or increased domestic aquaculture production, or some combination of both.

Aquaculture Policies

In June 2011, NOAA and the Department of Commerce released complementary national aquaculture policies that support sustainable marine aquaculture in the United States. The intent of the policies is to guide Commerce and NOAA's actions and decisions on aquaculture and to provide a national approach for supporting sustainable aquaculture. The Code deals with aquaculture in detail in Article 9 ("Aquaculture Development"), and stresses the need for increased global production of food fish from environmentally sound aquaculture operations. To implement these policies, NOAA has identified the following priorities for action:

- Establish a comprehensive regulatory program for the conduct of marine aquaculture operations;
- Advance scientific knowledge and develop appropriate technologies to support sustainable commercial marine aquaculture and the restoration of wild fish and shellfish stocks;
- Conduct education and outreach activities to heighten the public's awareness of issues related to marine aquaculture; and
- Meet international obligations to promote environmentally sustainable practices for the conduct of marine aquaculture.

International Cooperation

NOAA, in coordination with other U.S. Federal Agencies, works with international partners to develop and encourage adoption of sustainable aquaculture practices, and to ensure the safety of seafood imports. Some key bilateral and multilateral partnerships include research and management agreements with Japan, Korea, China, Canada, Norway, European Union members, Mexico, and Chile. The U.S. also participates in various multilateral organizations to support global and regional aquaculture research and management initiatives including meeting treaty obligations. These groups include:

- U.N. Food and Agriculture Organization (FAO);
- Asia Pacific Economic Cooperation (APEC) forum;
- World Organization for Animal Health (OIE);
- North Atlantic Salmon Conservation Organization (NASCO);
- The North Pacific Marine Science Organization (PICES);
- The International Council for Exploration of the Seas (ICES);

NOAA is in the process of developing an International Aquaculture Strategy to prioritize and guide ongoing and future international aquaculture efforts, including implementation of the NOAA and Department of Commerce aquaculture polices.

5. Fish Habitat and Ecosystems

Healthy fish habitat is essential to the reproduction, growth, and diversity of harvested fish and directly supports NMFS' priority to end overfishing and rebuild our nation's fisheries. Such a holistic approach to fisheries management is advocated in Article 6 of the Code, which states "management measures should not only ensure the conservation of target species but species belonging to the same ecosystem". NMFS' management focus continues to be more holistic, expanding beyond just fish habitat to comprising entire ecosystems, associated species and interactions among ecosystems. This change marks an important departure from previous approaches to management that only considered fish habitat. In fact, there are a handful of fishery management plans in the Alaska, South Atlantic and Hawaiian regions that are fishery ecosystem plans.

Under the Magnuson Stevens Act, a number of mandates pertaining to fish habitat require NMFS (and in certain cases, Councils) to: (1) identify and describe Essential Fish Habitat (EFH) in fishery management plans, (2) minimize the adverse effects of fishing on EFH to the extent practicable, (3) consult with other federal agencies to conserve and enhance EFH and on any action that might adversely affect EFH, and (4) restore EFH. The MSRA has included new discretionary measures to protect deep sea corals, target and non-target species and habitats from the impacts of fishing gear, such as bottom trawling. These measures parallel those outlined in FAO's "International Guidelines for the Management of Deep-Sea Fisheries in the High Seas". The U.S. continues to be a true leader in protecting sensitive habitat from fishing activities.

NMFS considers essential fish habitat to be the habitat necessary for managed fish to complete their life cycle, thus contributing to a fishery that can be harvested sustainably. EFH applies to each life stage of approximately 1,000 managed species. Different life stages of the same species often use different habitats. NMFS has interpreted through regulation that EFH must be described and identified for each federally managed species at all life stages for which information is available.

The NMFS strategic goals for ecosystems are to:

- Increase the pace and scale of habitat protection and restoration efforts in a changing climate;
- Expand partnerships to better leverage resources;
- Effectively monitor and evaluate performance of activities;
- Advance habitat science for more effective management decisions.

NMFS' vision is of healthy and sustainable habitat that provides a range of benefits for abundant fish and wildlife, commercial and recreational opportunities, and resilient coastal communities that can withstand hurricanes, flooding, and other natural and man-made threats.

So far, NMFS has accomplished the following:

Protection

- Protected 700 million acres of fish habitat—an area larger than the state of Alaska—from impacts of fishing gear since 2005;
- Reviewed 3,000 permit actions annually to minimize adverse impacts to essential fish habitat;
- Helped settle 196 natural resource damage assessment cases by the end of 2009, generating more than \$494 million to protect or restore thousands of acres of habitat and return valuable resources and services to the public;
- In 2010, protected more than 24,000 square miles of deep water coral habitat of concern in the South Atlantic council region from bottom fishing gear (e.g., bottom trawl, dredge, anchoring);
- In North Pacific and South Atlantic Council regions the precautionary approach referenced in the Code is exercised;

Restoration

- Restored 69,000 acres of habitat and opened 2,750 stream miles for fish passage through 1,645 restoration projects, since 1996;
- Provided an estimated \$217 million to support coastal fisheries habitat restoration, since 1996;

Stewardship

- Engaged 190,000 volunteers in habitat restoration since 2000;
- Reached an estimated 14,500 students and 3,300 teachers annually through the NOAA Chesapeake Bay Office's Bay Watershed Education and Training (B-WET) Program, established in 2002;
- Created 22 national and regional partnership agreements to assist with community-based restoration since 2000;

In addition to the accomplishments listed above, the National Ocean Policy provides more provisions for ecosystem management and protection.

The National Ocean Policy calls for coordinated coastal and marine spatial planning (CMSP) across nine different regions of the United States. Like CMSP, fish habitat is spatially explicit. Therefore many of NMFS' habitat focused activities will operate through CMSP frameworks.

Moreover, nine strategic action plans (or objectives) were developed pursuant to the National Ocean Policy, one of which pertains to regional ecosystem protection and restoration. This objective demands that NOAA establish and implement an integrated ecosystem protection and restoration strategy that is science-based and aligned with conservation and restoration goals at the Federal, State, tribal, local and regional levels.

Habitat Blueprint

A leading priority for NMFS habitat management efforts is the Habitat Blueprint which provides a forward looking framework to think and act strategically across programs and with partner organizations to address the growing challenge of coastal and marine habitat loss and degradation. This approach is meant to increase effectiveness of NMFS' efforts to improve habitat conditions for fisheries, coastal and marine life, along with other economic, cultural, and environmental benefits society needs and enjoys. The Habitat Blueprint consists of a four pronged approach including: implementing regional habitat initiatives; establishing geographic priorities; implementing a systematic and strategic approach to habitat science; strengthening policy and legislation. While the NMFS Habitat Blueprint starts with increasing efficiencies within NMFS and across its programs and offices, it is also designed to foster collaboration across federal, state, and local levels.

Fish Passage

Fish passage is another important aspect of the protection and restoration of fish and their habitats, under NMFS' purview. Salmon and other migrating fish, such as shad, alewives and sturgeon, need access to freshwater habitat for spawning and rearing. In some cases, these fish need to swim thousands of miles through the oceans and rivers to reach their destination, but they are often blocked from completing their journey by man-made barriers, such as dams and culverts. NMFS is leading the charge to open our nation's rivers and streams by providing fish passage solutions for these barriers. NMFS works with conservation organizations, energy companies, states, tribes and citizens to evaluate barriers—big and small—to improve fish passage. Most barriers have the same general impact on fish—blocking migrations—but each requires a specific set of conservation actions.

Through programs such as the Open Rivers Initiative, the NOAA Restoration Center has been able to open rivers and streams for fish and hundreds of other species by completely removing fish passage barriers. At the same time, the NOAA Fisheries Hydropower Program provides solutions for fish passage around hydroelectric dams. Together, NOAA programs have opened thousands of river miles with benefits to riverine, coastal, and marine ecosystems. In the past 14 years, NOAA has provided more than \$19 million and leveraged an additional \$52 million in partner funding to remove dams, replace culverts, and install fish ladders. NOAA funded and provided technical assistance to almost 400 fish passage projects around the country since 1996. In 2006, NOAA negotiated fish passage at two major hydropower projects—the Klamath River in California and the Santee Cooper River in South Carolina—opening more than 650 miles of historic river habitat to migratory fish. NOAA has also engaged more than 7,000 citizen volunteers who gave 42,000 hours to help implement fish passage projects since 1996.

Deepwater Horizon Oil Spill

On April 20, 2010, an explosion on the Deepwater Horizon drilling platform killed 11 men and led to a massive oil leak in the Gulf of Mexico. The magnitude of the Deepwater Horizon oil spill was unprecedented in U.S. history, causing a range of ecosystem impacts along the coastal areas of Louisiana, Mississippi, Texas, Alabama, and Florida. NMFS' role has been to collaborate with other state and federal agencies to conduct a Natural Resource Damage Assessment of the spill. The spill response is a legal process by which natural resource trustees determine the type and amount of restoration needed to compensate the public for injuries to natural resources resulting from an oil spill. The statutory authorities for these proceedings include the Oil Pollution Action of 1990 and the Clean Water Act.

6. Scientific Research and Advice

The NMFS and the fishery management council's scientific and statistical committees (SSCs) are responsible for ensuring that management decisions are based on the highest quality scientific information on the biological, social, and economic status of fish stocks and the associated fisheries. This includes information on species' responses to changes in the physical, chemical and biological conditions of ocean and coastal ecosystems, exploitation of fish stocks and other ocean resources, and other human activities that affect them and their habitat. Social, cultural, and economic behaviors and incentives that influence human/marine interactions are also addressed. Providing accurate, reliable scientific information is the bedrock foundation required, not just for current management decisions, but also to conserve resources and anticipate future trends, assure future utilization opportunities, and assess the effectiveness of the agency's management efforts in a changing climate.

The U.S. Federal government has a strong peer-review policy that establishes standards through the Information Quality Act (IQA) and subsequent guidelines issued by the Office of Management and Budget (OMB). The IQA guidelines require that important scientific information be peer reviewed before it is disseminated by the federal government and sets minimum peer review standards and a transparent process for public disclosure. All scientific information that has a "clear and substantial impact" on "important public policies or private sector decisions" is required to be peer reviewed. Scientific assessments that are expected to have a particularly high impact are held to more rigorous standards. Further, the guidelines require that the peer reviews meet a high level of scientific integrity by ensuring the expertise and experience of the peer reviewers and by setting strict standards to avoid conflicts of interest.

NMFS also uses the Center for Independent Experts (CIE) as an external peer review body for significant scientific products such as stock assessments. In 2010, NMFS requested CIE reviews for 20 stock assessments and 20 other scientific products (i.e., assessments on ecosystems, marine mammals, methods, socio-economic studies and other protected species).

In addition, each of the NMFS science centers, in collaboration with their associated fishery management council(s) conduct public reviews of Agency stock assessments (e.g., SEDAR <http://www.sefsc.noaa.gov/sedar>)

Finally, NMFS also relies on the National Academy of Science (NAS) to provide systematic advice on key questions. For example, a recent NAS study was on "Approaches for Ecosystem Services Valuation for the Gulf of Mexico after the Deepwater Horizon Oil Spill: Interim Report (2011)".

Many different types of data and information are used in fisheries management, from climatic and oceanographic information to species-specific catch and population trends data. These data come from a wide variety of sources and are synthesized and managed through multiple processes to make the information available and useful to decision-makers. The importance of this complex web of diverse data flowing into scientific advice for resource managers is

recognized specifically in Article 12 of the Code. The implicit goal of Article 12 is to increase the scientific information available to allow for greater certainty and confidence and to reduce risk.

It should be noted that complex and changing fisheries will never be perfectly understood, and, therefore, the scientific advice to management will always be affected by some level of uncertainty. This necessitates the need for Article 6.5 of the Code, which prescribes a precautionary approach to all fisheries proportionate to the degree of uncertainty, risk and reversibility of impacts.

To address uncertainty and provide scientifically sound data and information sufficient to support ecosystem-based fishery conservation and management for the next five years, NMFS will:

- Periodically assess stocks to ascertain whether changes in their status, due to natural or human-related causes, have occurred. These stock assessments require well-documented stock assessment models supported by adequate fishery monitoring and, in most cases, statistically rigorous fishery-independent resource surveys. More advanced stock assessments are being developed that incorporate data on the physical environment, including impacts of short-term environmental variability and long-term climate change on fish stocks and their habitats.
- Determine and reduce the level of uncertainty associated with stock assessments through improved data collection and advanced analytical techniques.
- Develop and apply the Integrated Ecosystem Assessment (IEA) framework to support provision of stock assessments that forecast abundance levels and trends, based on a comprehensive suite of ecosystem variables such as biological productivity, climatic and oceanographic information, ecological interactions, and economic and other social forces that affect fishing effort.
- Conduct additional research to provide needed information to refine Essential Fish Habitat (EFH) designations in a changing climate (e.g., to better differentiate between habitats used frequently or occasionally) and to help managers minimize the adverse effects of fishing, aquaculture, and other activities on EFH. Trade-offs of management alternatives can be assessed through the IEA process.
- Use economic and socio-cultural research to predict future trends (e.g., impacts of climate change on fishing effort and communities, entry and exit behavior from industry or community, organizational structure, cultural changes, etc.) of shore-side fishing-related households and firms in fishing communities. Provide these data to fishery managers to inform the analysis of tradeoffs between different fishery management strategies.
- Assess the vulnerability of fish stocks and fisheries to climate change and incorporate climate variability and change into stock assessments, management decisions and IEAs.
- Monitor, project and prepare for impacts of climate change, loss of sea ice, ocean acidification, and sea level rise on marine ecosystems and fisheries domestically and with international partners.

- Promote international scientific collaboration to improve ecosystem-based fisheries and protected species assessments and to exchange scientific methods through work with Regional Fishery Management Organizations (RFMOs) and other science organizations including the International Council for the Exploration of the Seas (ICES) and the North Pacific Marine Science Organization (PICES).

7. United Nations Fisheries Agreements

Two United Nations (UN) international fisheries agreements are closely associated with the Code of Conduct: first, the 1995 United Nations Fish Stocks Agreement (UN FSA), from which the Code drew; and second, the Compliance Agreement which is an integral part of the Code of Conduct.

When these two UN agreements were negotiated in the mid 1990s they represented a growing international consensus on the need to manage more effectively fisheries resources beyond the exclusive economic zones (EEZs) of coastal states. Particularly important from the U.S. point of view was the fact that UNFSA incorporated for the first time the precautionary and ecosystem approaches.

Compliance Agreement

The Compliance Agreement was negotiated mainly to prevent the circumvention of international fisheries regulations by "re-flagging" vessels under the flags of States that are unable or unwilling to enforce such measures. The Compliance Agreement, when ratified and enforced, is meant to close a major loophole for sound international fisheries management. The United States implements the Compliance Agreement through the High Seas Fishing Compliance Act of 1995, signed by President Clinton. Even though references to the Compliance Agreement are made in the preambles of many newly negotiated international fisheries agreements, the Agreement has not experienced the endorsement the United States had hoped for. At this point only 39 countries have ratified the Compliance Agreement, pointing to the Agreements' lack of implementation and thus effectiveness.

United Nations Straddling and Highly Migratory Fish Stocks Agreement (UN FSA)

The United States signed in December 1995, and later ratified the United Nations Straddling and Highly Migratory Fish Stocks Agreement (UN FSA), an arrangement that implements provisions of the UN Convention on the Law of the Sea relating to the conservation and management of straddling and highly migratory fish stocks. The United States implements fully the UN Fish Stocks Agreement through the Magnuson-Stevens Fishery Conservation and Management Act, as well as other legislation and regulations. And the United States works to ensure the implementation of the Agreement bilaterally and regionally through U.S. participation in regional fisheries management organizations. The principles established in the Agreement have been incorporated into the conventions that established the Southeast Atlantic Fisheries Organization and the Western and Central Pacific Fisheries Commission, as well as the instruments that have been adopted to modernize the Northwest Atlantic Fisheries Organization and the Inter-American Tropical Tuna Commission.

International Plans of Action (IPOA) and National Plans of Action (NPOA)

The United States has voluntarily developed National Plans of Action for (1) reducing incidental catch of seabirds in longline fisheries, (2) the conservation and management of sharks, (3) the management of fishing capacity and (4) Illegal, Unreported, Unregulated (IUU) fishing. These NPOAs were developed pursuant to the International Plans of Action (IPOA) adopted by FAO in 1999 and 2001. The IPOAs were developed as voluntary instruments in response to consecutive calls from the Twenty-third and Twenty-fourth Sessions of the Committee on Fisheries (COFI), to manage issues of compliance which are discussed in the Code of Conduct.

Port State Measures

On November 22, 2009, the United States became a signatory to a new treaty to require stronger controls on vessels carrying fish into the world's ports. The treaty, entitled the Agreement on Port State Measures to Prevent, Deter and Combat Illegal, Unreported and Unregulated Fishing, was negotiated under the auspices of the FAO. It breaks new ground as the first global treaty focused specifically on addressing illegal, unreported, and unregulated (IUU) fishing. It is designed to combat such fishing through, inter alia, establishing minimum standards for the conduct of fishing vessel inspections and inspector training by port States; requiring denial of port entry and/or access to port services to vessels that have been engaged in IUU fishing or fishing-related activities; and requiring Parties to the agreement to investigate and take appropriate enforcement action in response to IUU activity detected during an inspection. Many countries see this agreement as the most significant international treaty dealing with fisheries since the 1995 UN Fish Stocks Agreement. By recognizing the key role that port States play in the movement of IUU fish around the world, and the necessity for international cooperation and information sharing, this treaty represents a significant step forward in the global effort to combat IUU fishing.

UN Resolution 61/105: International Guidelines for the Management of Deep-Sea Fisheries on the High Seas

UN Resolution 61/105 was adopted by the UN General Assembly in December 2006 and represents an important fisheries management mandate for RFMOs. The Resolution bans deep sea fishing that "would have significant adverse impacts on vulnerable marine ecosystems (VMEs)". VMEs include ecosystems such as seamounts that are comprised of rare and endemic species (e.g., corals and sponges) and are of low productivity thus highly susceptible to fishing activities such as bottom trawling. The Resolution marks an important departure for RFMO functioning and management because it reverses the burden of proof. In other words, it requires RFMOs, or flag states where competent RFMOs do not exist, to prove that fishing activities would not have significant adverse impact on any VMEs before allowing fishing, rather than the reverse (which is often the case in conventional fisheries management).

As requested in UN Resolution 61/105, the FAO developed international guidelines for the management of deep-sea fisheries in the high seas that incorporates much of the Resolution's language. RFMOs are currently implementing these FAO guidelines into their management.

FAO Bycatch Guidelines

International guidelines on bycatch management and reduction of discards were developed at an FAO meeting in Rome in December 2010. The meeting was convened by the Director-General of the FAO upon the recommendation of the Twenty-eighth Session of the FAO Committee on Fisheries. The United States (i.e., NMFS) helped to negotiate the draft text that came out of these technical consultations.

8. Trade

Article 11 of the Code of Conduct deals with "post-harvest practices and trade". As the title suggests, much of Article 11 does not deal with trade rules or principles in the strict sense, but with a wide variety of "post-harvest practices". The Code's provisions on "post-harvest practices" include guidelines on a number of issues, e.g., (1) reduction of post-harvest losses and waste; (2) increased human consumption of the resource; (3) conformity with sustainable development; and (4) the free exercise of consumer choices.

With respect to the trade-related provisions of the Code, NMFS understands that these are not intended to add to or diminish the rights and obligations of World Trade Organization (WTO) Members pursuant to WTO Agreements. Since there is some possibility of ambiguity and inconsistency between the trade-related language of the Code and obligations under the WTO Agreements, the United States understands that the Code is voluntary and the WTO Agreements are binding. As Article 2(h) clearly states the objectives of the Code related to trade are to "promote the trade of fish and fish products in conformity with relevant international rules and avoid the use of measures that constitute hidden barriers to trade."

Some of the trade issues addressed in Article 11 do however involve formal trade rules and principles that are embodied in the various WTO agreements. Among important provisions of the Code's trade-related provisions related to WTO Agreements are: (1) trade liberalization; (2) product safety and health; and (3) WTO consistency of trade measures implemented for conservation purposes.

Trade Liberalization

While it is not strictly a trade agency, NMFS, which is located in the Department of Commerce, has consistently promoted the liberalization of trade in fish and fisheries products and will likely continue to do so in the future. This generic activity is undertaken at a technical level by NMFS in cooperation with U.S. trade agencies, in particular, the Office of the United States Trade Representative (USTR), the Department of Commerce's International Trade Administration, and the U.S. International Trade Commission, among other agencies.

As a country with very low bound and applied tariff rates on fish and fisheries products and comparably low government support to the sector, NMFS has supported trade liberalization in a variety of multilateral, regional and bilateral fora including in the WTO, the Asia Pacific Economic Forum (APEC), the Organization for Economic Cooperation and Development (OECD), the UN Food and Agriculture Subcommittee on Fish Trade and a range of free trade agreements, including the Trans-Pacific Partnership. NMFS has two broad fishery-related interests in the WTO: (1) defending our conservation laws in WTO dispute settlement; and (2) negotiating fisheries tariffs, non-tariff barriers, and subsidies in the trade rounds. More specifically, the United States has been seeking an ambitious outcome in the WTO to negotiations to tighten rules on subsidies to the fisheries sector.

WTO Consistency of Trade Policies and Measures

The Code of Conduct also addresses generally the consistency between measures affecting fisheries trade and WTO trade rules. As a practical matter, NMFS participates in many international organizations that deal with fishery conservation and protected species issues, and, in some instances, these organizations authorize the use of certain trade measures. An example of a fishery conservation body that now endorses the use of a trade measure is the International Commission for the Conservation of Atlantic Tunas (ICCAT); an example of an international body that deals with protected species issues with a trade component is the Convention on International Trade in Endangered Species (CITES).

Trade measures intended to support international fishery conservation and protected species objectives are implemented through domestic legislation, principally the Magnuson-Stevens Act, and a number of U.S. laws authorize and/or mandate the use of such trade measures. Examples include the Pelly Amendment to the Fishermen's Protective Act of 1967, the Marine Mammal Protection Act (MMPA), and the Endangered Species Act (ESA).

9. Safety at Sea

Commercial fishing is one of the most dangerous occupations in the United States. Fishing operations are often conducted under poor weather conditions, high winds, cold temperatures, and on moving platforms that can be slippery or icy; with gear types that can be dangerous to operate; where structural or mechanical problems on vessels can arise; and the work can be physically straining and lead to fatigue.

From 1992 to 2008, an annual average of 58 reported deaths occurred (128 deaths per 100,000 workers) in the fisheries sector compared to an average of 5,894 deaths (four per 100,000 workers) among all U.S. workers. Recreational fishing can also be a dangerous activity with participants facing many of the same risks as commercial participants.

In Article 8 of the Code, States are advised to ensure that fishing is conducted with due regard for the safety of human life and the International Maritime Organization (IMO) International Regulations for Preventing Collisions at Sea, as well as International Maritime Organization requirements relating to the organization of marine traffic, protection of the marine environment and the prevention of damage to or loss of fishing gear.

Despite the hazards associated with fishing, NMFS has made substantial progress in improving the safety of fishermen and vessels at sea. The National Standard 10 Guidelines (NS10) are the primary source of guidance for the consideration of safety issues in fishery management regulations. NS10 parallels Article 8 of the Code in that it states: “conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.” NS10 was added to the MSA through the signing into law of the Sustainable Fisheries Act in 1996. NMFS published final Guidelines for NS10 in 1998. NS10 also directs councils to reduce the risks associated with fishing in an FMP or FMP amendment, or other regulation that might affect safety of human life at sea, and the council must consult with the USCG and the fishing industry as to the nature and extent of any adverse impacts on safety.

More recently, the MSRA of 2006, added section 303(a)(9)(C) to the MSA, which states that fishery impact statements shall address the impact of conservation and management measures and include possible mitigation measures for “the safety of human life at sea, including whether and to what extent such measures may affect the safety of participants to the fishery”. As the result of this new requirement, NMFS is in the process of revising the NS10 Guidelines to bring the twelve year old Guidelines further up to date.

Recent work by the National Institute for Occupational Safety and Health and the U.S. Coast Guard has shown that the fishery management process can more explicitly address safety at sea by analyzing fatalities and calculating fatality rates for the fishery and understanding the overall trend in fatality rates. This information can be used in risk assessments to identify major hazards within the fishery. NMFS is in the process of including guidance on the analytical approaches for addressing safety considerations in the revised NS10 Guidelines.

Coast Guard Authorization Act of 2010

Another important milestone in improving safety at sea is the Coast Guard Authorization Act (CGAA) of 2010, signed by President Obama on October 15, 2010. Section 604 of the CGAA builds on requirements set forth in the Commercial Fishing Industry Vessel Safety Act of 1988 by authorizing the U.S. Coast Guard to (1) perform dockside examinations, at least once every two years, of fishing vessels operating beyond 3 miles to ensure that they meet safety standards identified in chapter 45 of Title 46 of the United States Code; (2) require a training program for operators of fishing vessels that operate beyond 3 miles; (3) establish design and construction standards for all new vessels; among other requirements.

10. Seafood Safety and Quality

Article 11 of the Code stresses the important role that States must play in establishing and maintaining effective seafood safety in order to protect consumer health and prevent commercial fraud. NMFS' programs are aligned with achieving such goals. Under authority of the 1946 Agricultural Marketing Act, NMFS provides inspection services for fish, shellfish, and fishery products. NMFS also has co-delegate responsibilities with the Food and Drug Administration.

NMFS offers a variety of professional inspection services on a fee-for-service basis which assure compliance with all applicable food regulations. The Program offers sanitation inspection as well as system and process auditing in facilities, on vessels, or other processing establishments in order to be designated as participating establishments. Product quality evaluation, grading and certification services are available on a product lot basis. Certain products may be eligible for stamping with official marks, such as the U.S. Grade A, Processed Under Federal Inspection (PUFI) and Lot Inspection.

The services provided by NOAA include the following:

- Establishment Sanitation Inspection
- System and Process Audits
- Product Inspection and Grading
- Product Lot Inspection
- Laboratory Analyses
- Training
- Consultation
- Export Certification

These services are provided nationwide, in U.S. territories, and in foreign countries. All types of establishments such as vessels, processing plants, and retail facilities may receive these services. All edible product forms ranging from whole fish to formulated products, as well as fish meal products used for animal foods, are eligible for inspection and certification.

The program is the competent authority within the U.S. Government for issuance of health certificates for export of fish and fishery products to foreign countries. The official government forms and certificates issued by United States Department of Commerce inspectors are legal documents recognized in any U.S. court.

FAO/WHO Codex Alimentarius Commission

The Codex Food Standards Program was established in 1963 when FAO and WHO recognized the need for international standards to protect the health of consumers and facilitate trade among member nations. The Codex Alimentarius Commission (CAC) is charged with developing food standards for adoption and use by member countries. These international food standards

are contained in 14 volumes that have been adopted by the CAC. The purpose of these standards is to protect the health of consumers and facilitate fair practices in food trade. These texts are in the form of Specific Food Standards, Codes of Practice and Recommendations. The CAC includes provisions for food hygiene, food additives, pesticide residues, contaminants, labeling and presentation and methods of analysis and sampling.

The output products of the Codex Alimentarius Food Standards Program generally relate to four specific areas, for example, (1) the development of General Principles to be followed in the international trade of food commodities, (2) specific Codex Commodity Standards for individual food commodities, or processing requirements, (3) the establishment of Codex Guidelines for specific actions or procedures, and (4) recommended Codes of Hygienic Practice which are similar to our Good Manufacturing Practices that are to be followed when producing and/or manufacturing specific food commodities. A country's adherence to these Codex outputs provides the country a "safe harbor" in the settlement of GATT disputes by WTO. The Codex Program provides a forum for the world's leading experts to discuss, debate, and reach a scientific consensus on the food safety issues that affect international trade. Further, governmental participation allows access to the world's most current and complete body of scientific food safety information. Without a doubt, Codex has upgraded global food manufacturing practices which have dramatically resulted in improved global consumer protection. Such improvements lessen expensive regulatory efforts for importing countries during a time of shrinking resources. The United States has benefited and contributed substantially from its participation in Codex. Action of the Codex Alimentarius Program can greatly influence world regulatory food control activities since Codex work products represent a consensus of opinion on regulatory issues by the more than 140 member countries that in turn represent more than 97 percent of world's population.

World Trade Organization (WTO)

The United States is a signatory of the WTO Agreement on Sanitary and Phytosanitary Measures, and fully supports its implementation domestically and internationally.

V. Implementation Steps

The NMFS plan to implement the Code of Conduct for Responsible Fisheries reflects and conforms to the legal mandates of the Magnuson-Stevens Act, especially the reauthorization passed in 2006 and with the guidance developed internally such as the NOAA Next Generation Strategic Plan and President Obama's National Ocean Policy.

To reach these mandated objectives, NMFS continues to work closely with all of its constituencies, in particular the Regional Fishery Management Councils. Specific implementation steps will vary significantly from fishery to fishery, region to region, and, therefore, from Council to Council. The key roles that the Councils play are to develop the fishery management plans (or ecosystem management plans), and generally to interact with all the constituencies and user groups interested in that plan.

To make the best choices, NMFS will continue to take into account input and suggestions from commercial fishermen, processors, marketers and other commercial sectors, including the marine aquaculture industry, and from recreational fishermen and environmental organizations and Tribal, State and local government agencies and entities. Accordingly, NMFS welcomes specific suggestions and proposals from any of the above constituencies on how to move forward with any elements of this implementation plan.

In the international arena, NMFS will work with all federal agencies, including the Departments of State, Commerce, Interior, Defense, Homeland Security, Agriculture and the Office of the U.S. Trade Representative, and with foreign Governments, and with the various regional commissions that are involved in the management of international fisheries.

This plan provides an outline, a method, and a set of long-term goals, but the action steps to reach those objectives will differ from issue to issue and, to some degree, according to the needs and desires of all our constituencies and the availability of practical options.