



Celebrating 40 Years of Regional Fisheries Management

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Table of Contents

Introduction	5
Caribbean Fishery Management Council	10
Gulf of Mexico Fishery Management Council	13
South Atlantic Fishery Management Council	18
Mid-Atlantic Fishery Management Council	23
New England Fishery Management Council	27
North Pacific Fishery Management Council	31
Western Pacific Fishery Management Council	35
Pacific Fishery Management Council	40
U.S. Regional Fishery Management Councils Joint Accomplishments	44



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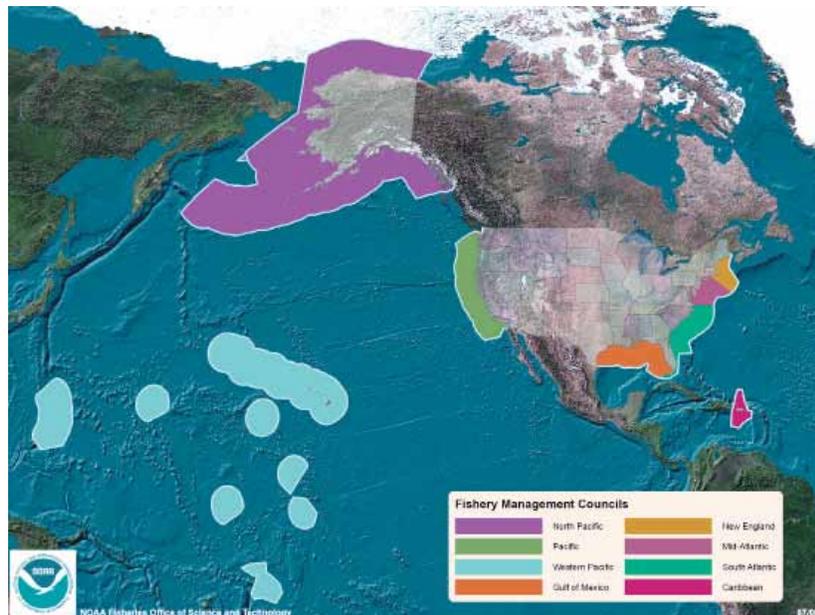
Introduction

This year marks the 40th anniversary of the Magnuson-Stevens Fishery Conservation and Management Act, the primary law governing marine fisheries in U.S. waters. The Act ushered in a new era of managing marine fisheries and conserving fish stocks by extending federal fisheries jurisdiction out to 200 miles and establishing the Regional Fishery Management Council system. To fully appreciate the scale of this monumental change, let's look at how fisheries were managed before the Act was put in place.

Before 1976, federal marine fisheries management was limited in scope and jurisdiction. In 1789, Secretary of State Thomas Jefferson pushed the United States to extend jurisdiction out to three miles, based on the reach of a cannon ball shot from shore, to protect local fisheries and trade. The Federal Government didn't become more deeply involved until 1871, when Spencer Baird was appointed as the first U.S. Fish Commissioner to study the decline of fish along U.S. coasts and lakes. The U.S. Fish Commission was largely advisory, with management actions developed and put in place by individual states. At the time, the Federal government focused on basic research and fish culture rather than the complexities of fishery management. When the Fish Commission became the Bureau of Fisheries in 1903 under the Department of Commerce, several broad regulations were created to manage offshore fisheries, including a prohibition on taking fish with dynamite or poison.

Federal interest in managing offshore fisheries remained limited until 1945, when President Truman issued a proclamation to establish U.S. conservation zones in the high seas and declared that fishing activities in these zones would only be conducted through agreements between the United States and affected nations. For the next 30 years, this proclamation guided our policy for offshore fisheries; restrictions on foreign fisheries operating in U.S. waters were conducted through bilateral agreements and U.S. participation in international fisheries commissions. In 1964, Thomas Jefferson's dream of expanded jurisdiction became reality, and all fishing by foreign vessels was prohibited within three miles of our coast. In 1966, the United States expanded its exclusive fishing zone in most areas and for most species to 12 miles.

Despite these laws, U.S. fishermen remained at a distinct disadvantage. Vast foreign fleets operating with few restrictions, enforcement, or monitoring, harvested fish just outside of the 12-mile limit (tuna fleets outside three miles). Fish stocks were overharvested and depleted, and U.S. fishermen were left with few fish to catch and little support from the U.S. government. Off Alaska, the Pacific Coast and Northwestern Hawaiian Islands, vessels from Japan and the Union of Soviet Socialist Republics were catching immense quantities of groundfish—and overharvesting yellowfin sole, Pacific Ocean perch and seamount armorhead in the process—and directly impacting the Alaska red king crab and halibut fisheries, which were the only offshore domestic fisheries operating on the west coast at the time. Off New England, vessels from the Soviet Union, Spain, Poland, and other countries were catching unlimited amounts of haddock, cod, and herring on Georges Bank. In the Southeast, Cuban vessels were harvesting snapper and grouper without limits off the west coast of Florida. Off Hawaii and other U.S. Pacific Islands, vessels from Japan, Taiwan and the Soviet Union targeted groundfish, deep-water precious corals and tuna and incidentally caught billfish and other species. By 1975, over 2,700 foreign fishing vessels and motherships were fishing off U.S. shores, essentially catching any species in any quantity they could within the terms of agreements. With declining catches for U.S. fishermen, and negotiations on the Law of the Sea Treaty stalled, fishermen were pressuring the Congress to take unilateral action and extend our jurisdiction for fisheries out to 200 miles.



After several years of hearings and debate, Congress enacted the Fishery Conservation and Management Act, which was signed into law by President Ford April 13, 1976. The law became effective March 1, 1977. The Act was renamed in 1980 to honor U.S. Senator Warren Magnuson and in 1996 to honor U.S. Senator Ted Stevens (two Senators who drafted the law) and is currently known as the Magnuson-Stevens Fishery Conservation and Management Act.

The Act had several stated purposes:

1. Allow the U.S. to take immediate action to conserve and manage fisheries off the U.S. coast within the 200-mile fishery conservation zone
2. Support international agreements for conservation and management of highly migratory species
3. Promote domestic commercial and recreational fishing
4. Provide for the preparation of fishery management plans to achieve and maintain optimum yield
5. Establish regional fishery management councils to prepare and maintain management plans and enable fishermen and others to participate in and advise on the preparation of such plans
6. Encourage development of underutilized fisheries

As soon as the Act was put in place, the management of U.S. fisheries changed dramatically. First, it conferred exclusive rights and the authority for the United States to manage fishery resources within 200 miles off the coast, meaning that foreign fisheries could only operate with strict conservation and management regulations, monitoring, and enforcement. Management of virtually all continental shelf stocks, and the recovery of depleted stocks, were now entirely within the control of the United States and based on the best available scientific data. Tuna was excluded from the Act until 1990.



Photo Credit – NOAA's Northeast Fisheries Science Center

Second, the Act provided economic benefits to U.S. fishermen and encouraged development of domestic fisheries. In 1976, the catch by domestic fishermen in the fishery conservation zone was 289,000 metric tons, while the foreign catch was 2 million 500 thousand metric tons. However, beginning that year, the fish that had been historically caught by the foreign fleets were now available to domestic fishermen. U.S. fishermen jumped at the opportunity, and by the end of 1977, 40 new fishing vessels were under construction in New England, 400 in the South Atlantic and Gulf States, and more than 20 new vessels on the West Coast. By 1992, the catch was being harvested entirely by domestic vessels.

Third, and perhaps most important, the Act implemented a new governance structure by creating a suite of eight management bodies called Regional Fishery Management Councils. The Council system was designed to allow regional, participatory governance by knowledgeable people with a stake in fishery management. Each Council's voting members include one National Marine Fisheries Service representative, a representative of each state/territorial fishery agency in the Council area, private citizens nominated by state/territorial governors and approved by the Secretary of Commerce because of their specific qualifications, and in some regions, a representative from local tribal governments, the U.S. Coast Guard, the U.S. Department of State, and the U.S. Fish and Wildlife Service.

Jim Branson, the first executive director of the North Pacific Council and an advisor to developers of the Act, offered his view of why a regional council system was developed:

The Regional Councils were established as a response to a complex of desires and fears within the U.S. fishing community while the Magnuson Act was being developed (those same forces are still evident). Coordination between coastal states was obviously needed for the management of marine resources—it had to be mandatory—and the states wanted a voice in the process. There was a general concern about letting the existing federal agency manage the resource. Centralized control by the “Feds” was feared. In an area where the Federal government has a history of hands-on management, pre-statehood Alaska, its tenure is remembered with apprehension. The states and industry feared the loss of local input and control that might occur if the Federal government centralized management. There was also a sincere desire by many to strengthen the state/federal relationship through a forum in which each, as well as the industry and general public, would have a vote.

The Councils thus were intended to balance the power structure of fisheries and fisheries management in their regions. They were expected to improve coordination and working relationships in the state/federal arena, be the recipients and sounding boards for all the advice and information anyone wished to give, and serve as a buffer between the regional process and the Federal system. That they tend to be different from other elements of government and from each other should come as no surprise.

The eight Regional Fishery Management Councils now serve at the front line of fisheries management. The Councils initiate and develop regionally applicable management measures such as fishing seasons, bag limits, quotas, and closed areas through a fully transparent and public process. Proposed regulations are vetted by expert panels of scientists, stakeholders, and the public before a Council makes a final decision. The open process provided by the Council system allows everyone to have a say in the stewardship of our marine resources and how fisheries are managed. After adoption by Council vote, these measures are subject to review and approval by the Secretary of Commerce, regulatory implementation by the National Marine Fisheries Service, and enforcement by the U.S. Coast Guard, NOAA, and other authorities.

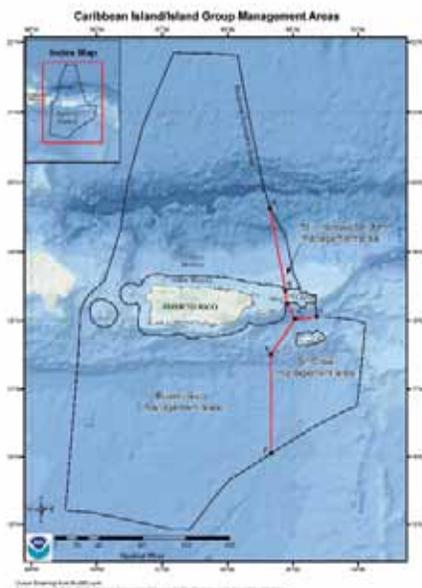
For the last 40 years, the Magnuson-Stevens Fishery Conservation and Management Act has proven to be successful. Foreign fisheries have been phased out. Stocks have been rebuilt and sustainably managed based on sound science. Management measures are developed within each region by the Councils through a transparent and participatory process. The Magnuson-Stevens Act works, and works well. Our nation's commercial and recreational fisheries currently contribute nearly \$200 billion annually to the U.S. economy and support 1.7 million jobs. Now that's success worth celebrating!





Caribbean Council

The Caribbean Fishery Management Council is responsible for managing and conserving fishery resources in the U.S. Caribbean exclusive economic zone (EEZ). The Caribbean Council is unique in that it is the only regional council that does not include any of the 50 states in its management area. Its jurisdiction extends from nine nautical miles off Puerto Rico, and three nautical miles off the waters of the U.S. Virgin Islands (St. Thomas/St. John, and St. Croix).



Fisheries in the U.S. Caribbean include spiny lobster, queen conch, and numerous fish species associated with coral reefs, as well as pelagic species, such as dolphin and wahoo. Commercial fishers target these species using hooks, nets, traps, and diving gear. Recreational anglers target the same species using rod and reel and SCUBA gear.

The Caribbean Council has used seasonal area closures to protect these species when and where they are most vulnerable during their spawning season. The complexity of the reef fish fisheries, together with the high diversity of fish species caught on every trip, presents a difficult challenge for scientists and managers. The Council adopted annual catch limits for these species as required by the Magnuson-Stevens Act. To date, the Caribbean Council has developed fishery management plans for spiny lobster, reef fish, corals and queen conch. These plans have been amended

to describe the essential fish habitats needed for these species. Due to the complexities of the U.S. Caribbean fisheries, and the need to include the ecosystem as a whole in the management process, among other reasons, the Caribbean Council agreed to work on the development of geographical based fishery management plans. Thus, separate fishery management plans will be developed for St. Thomas/ St. John, St. Croix, and Puerto Rico.

The CFMC recognizes its achievement of the following milestones in the implementation of the MSA in the U.S. Caribbean EEZ.

Communication With Fishers

Throughout the past 40 years the Caribbean Fishery Management Council has succeeded in bringing fishers to the table, achieving a very effective and respectful dialogue through public meetings, workshops and participation in Council meetings. The complexity of the reef fish fisheries, together with the high diversity of fish species caught on every trip, presents a difficult challenge for scientists and managers. With fishers' participation, over 140 species of commonly landed reef fishes are included in the Shallow-water Reef Fish Management Plan, among them the groupers and snapper which are the most important fisheries in the region. Fishers recognize the effectiveness and value of the first Marine Conservation District established in the U.S. Caribbean EEZ to protect the breeding area of Mutton Snapper, as well as the implementation of accountability measures. Accountability measures are management controls to prevent annual catch limits from being exceeded and to correct or mitigate overages of the annual catch limit if they occur.



Photo Credit – CFMC

International Multilateral Agreements

The Council established international multilateral agreements for the management of regional species such as queen conch and spiny lobster, two highly valuable commercial species in Caribbean fisheries. Many species and stocks managed by the CFMC are distributed throughout the Caribbean. In efforts to manage the fishery resources on a coordinated and sustainable basis, the CFMC has spearheaded the International Initiative for Queen Conch and the Nassau Grouper Spawning Aggregation Initiative, whereby more than twenty Caribbean nations work together to conserve Pan-Caribbean fish resources.

Models for Data Analysis

The Council has worked hard to improve applicable mathematical models to analyze and evaluate the fisher's data. This is an important achievement, due to the fact that it is recognized by scientists and economists that the field data is very poor for the U.S. Caribbean region, thus making it difficult to implement any of the necessary management measures. Along these lines, universities are developing academic programs and software applications to facilitate data collection by fishers and improve our scientific analyses.



Photo Credit – CFMC

Improvement of Fishing Gear

Finally, a fourth milestone is the design of fish traps to require escape panels, larger wire mesh and most recently escape vents to avoid incidental catch. This is significant, given the complexity of the U.S. Caribbean fisheries where fishers have used, and continue to use, traps and a variety of traditional and artisanal fishing arts to target a diverse assemblage of fish and other marine species.



Gulf Council

The U.S. Gulf of Mexico is home to some of the most productive commercial fisheries in the world and a haven for millions of recreational anglers who fish its waters. According to the National Marine Fisheries Service report *Fisheries Economics of the U.S.*, over 3.1 million recreational anglers took 23 million fishing trips in the Gulf of Mexico region in 2012. During that same time, 1.7 billion pounds of commercial fish and shellfish were harvested from the Gulf, bringing in roughly \$763 million in revenue.

Conservation and management of Gulf of Mexico fisheries is a goal of our federal fisheries law – the Magnuson-Stevens Act (MSA). Prior to the MSA, few of the fisheries in the Gulf were actively managed largely due to the absence of international treaties requiring data, research, and regulations. Our early stock assessments indicated most of the actively fished species were overfished. Today most have recovered through progressive management and the Gulf supports vibrant and sustainable commercial and recreational fisheries.

The following are some of the major management actions taken by the Gulf of Mexico Fishery Management Council in an effort to further that goal.

Reducing Bycatch

Through forty years of federal fisheries management, the Gulf Council has developed myriad management measures to reduce bycatch and bycatch mortality.

In its very first plan - the Shrimp Fishery Management Plan - the Gulf Council included management measures that encouraged research on, and development of, shrimping gear that would reduce incidental catch without decreasing overall efficiency or adding excessive cost.



Photo Credit – Emily Muehlstein

Gulf shrimp boats were catching too many juvenile red snapper in their trawls, negatively impacting the red snapper population. Under the Endangered Species Act, shrimp trawls were already mandated to use Turtle Exclude Devices, but they did little to reduce finfish bycatch in the shrimp fishery.

It wasn't until 1998, through Shrimp Amendment 9, that the use of bycatch reduction devices to reduce shrimp trawl bycatch became a requirement. Their use has been successful, resulting in an average 30% reduction in shrimp trawl bycatch. The use of BRDs has contributed to the rebuilding of the red snapper fishery and subsequent increases in the red snapper annual catch limit over the years.

In 1997, an amendment to the Reef Fish Fishery Management Plan was developed to address bycatch issues associated with fish traps. The Council first established a three-year moratorium on fish trap endorsements, but eventually decided to phase out fish traps altogether as concerns grew over incidental catch of non-targeted species, unreported effort and non-selectivity from illegal fishing, and long-term ghost fishing from abandoned or lost traps. A ten-year phase out was implemented to minimize the adverse economic impacts that trap elimination would have on fishermen by providing them time to plan for diversification into other gear types or other fisheries. In 2007, all fish traps were prohibited and the phase-out was complete.

Limiting Access

In the early 1990s, with several reef fish species declared overfished, experiencing overfishing, or both, the Gulf Council began its first of several amendments to limit entry to certain fisheries. In 1991, a temporary-turned-permanent moratorium on commercial reef fish permits was implemented to limit an increase in effort and to help stabilize fishing mortality.



Photo Credit – Emily Muehlstein

Later, as tourism began to grow, so did the number of charter vessels fishing in the Gulf of Mexico. The result was an increase in fishing pressure on reef fish and coastal migratory pelagics. To protect the resource from additional fishing pressure, a similar permit moratorium (2003) was placed on the charter-for-hire reef fish and coastal migratory pelagic permits.

Recently, the shrimp permit moratorium that has been in place since 2005 was extended to provide protection for those who remain in the fishery against unprofitable conditions that could arise from new entrants.

Individual Fishing Quotas

The Gulf Council first began looking at the prospect of designing a catch share program for the commercial red snapper fishery in the early 1990s as a way to reduce overcapacity, end overfishing, and reduce the problems associated with derby fishing. During this time, red snapper in the Gulf remained overfished and continued to experience overfishing. Both the commercial and recreational sectors continued to exceed their quotas despite a number of management measures designed to end over harvest. The commercial fishery had developed into a derby fishery, with an excess of red snapper flooding the market during short seasons, negatively affecting overall value. On top of that, in their race to fish, commercial crews were, at times, fishing in unfavorable weather conditions and jeopardizing their safety.

In late 1995, the Council approved an Individual Transferable Quota (ITQ) Program for commercial red snapper. Before the program could be implemented, the 1996 Sustainable Fisheries Act was implemented, placing a moratorium on new ITQ programs until October 1, 2000. When the moratorium barring the development of new ITQ programs expired in 2001, the Council, once again, began to develop a catch share program for the commercial red snapper fishery.

After five years of working closely with stakeholders, holding numerous advisory panel meetings, scoping hearings, public hearings, Council meetings, and two referenda, the Council approved the first of two Individual Fishing Quota (IFQ) Programs for the Gulf of Mexico. The Red Snapper IFQ Program was implemented and became effective January 1, 2007.

Today, nearly ten years after implementation, the number of red snapper shareholders has decreased from 554 to 378. Simultaneously, the overall red snapper quota has nearly tripled in size; going from five million pounds to almost 14 million pounds in 2015. More important, the commercial sector has remained within its quota since inception, and the unsafe and economically harmful derby conditions have been eliminated.

A recent review of the program documented its progress toward meeting its goal. Fishing capacity has been reduced, the race to catch fish has ended, and commercial fishermen are operating more efficiently and; improving safety at sea.



Photo Credit – Kathy Hoak

Sector Separation – Private and For-Hire Anglers

The most recent of the Gulf Council's milestones was the division of the recreational sector into separate private angling and for-hire components for red snapper fishing. Red snapper is the Gulf's most sought-after species. This highly valued status makes it difficult for the Council to balance differing public needs and desires with scientific recommendations for continued rebuilding of the fishery. Because red snapper is of such great public interest, new and innovative fishery management measures are often pursued in the red snapper fishery.

The establishment of sector separation provides a basis for increased flexibility in management of the recreational sector. Previously, for-hire and private recreational anglers were bound by the same regulations including seasons, size limits, and bag limits. However, sector separation divides the recreational quota among the two components of the fishery so that management measures can be

tailored to the needs of the different types of fishing. This flexibility in management could potentially reduce the chance of exceeding harvest limits in the recreational sector, while continuing to improve the rebuilding of this overfished stock.



Photo Credit – Mark Miller

Deciding how to divide the recreational red snapper quota among the two user groups was arguably the most controversial part of the sector separation amendment. The Council ultimately chose to use historical landings data to determine the allocation. Since the fishery has changed over time, partly due to different regulations affecting fishing

behavior, it wasn't a straight forward decision on which years to use for allocating the resource. The Council decided to use all the years of data available and place more emphasis on recent years' landings. Specifically, the Council allocated based on 50% of the average percentages landed by each component for the longest time series (1986-2013) and 50% of the average percentages landed by each component for the most recent years (2006-2013). Landings for 2010 were excluded in both instances because that year the B.P. Oil Spill significantly impacted fishing activity and landings.

The provisions in this amendment – Reef Fish Amendment 40 - include a sunset clause that terminates the amendment after 2017. The Council will determine whether to let the amendment lapse as planned. If the Council decides sector separation is a viable management measure, they could extend the amendment for future years.

Looking Forward

The Council continues to work on numerous fisheries management issues. One of the most prominent is the need to work with the private angling community to identify management measures that will help increase fishing opportunities and address data collection needs. While the Council recently reallocated red snapper in favor of the recreational sector, catch limits will continue to be strictly monitored, and fishing opportunities may continue to decline without further management changes. This is perhaps the Council's biggest challenge because the fishery resource is limited, while the demand for fish and fishing opportunities continues to grow.



Photo Credit – Joseph Cawthon



South Atlantic Council

The South Atlantic Fishery Management Council is responsible for a broad range of federally managed fisheries from the North Carolina/Virginia boundary southward to the Florida Keys under eight individual fishery management plans. Due to the migratory nature of some species, the Council designates management beyond the South Atlantic jurisdiction for dolphin/wahoo that are managed along the entire east coast and mackerels/cobia that are managed through the Mid-Atlantic. Below are some of the milestones highlighting the successes and continued challenges in managing these diverse fisheries.

The Early Years – Changing Attitudes and Actions

As late as the early 1980s, it wasn't unusual to see both commercial and recreational fishermen bring in large catches, filling fish boxes and coolers with nearly everything that hit a line. There were few regulations in place and little regard for such practices as catch and release. Huge grouper lined the decks of commercial boats and mackerel spilled from overloaded nets; tournaments that encouraged every fish be brought to the dock; and recreational anglers were encouraged to target "underutilized" species such as triggerfish and king mackerel. Over capitalization of commercial fisheries and an influx of recreational fishermen stemming from expanding populations in the Southeast put increasing pressure on fish stocks. Under the guidance of the Magnuson-Stevens Act, the South Atlantic Council began development of fishery management plans and subsequent management measures to control unregulated harvest.



Photo Credit – Don DeMaria

Beginning in 1983, federal regulations such as commercial trip limits, gear restrictions, bag limits, and minimum size limits were put into place to control harvest and begin rebuilding dwindling stocks. In 1990, the Council prohibited all harvest of goliath grouper, recognizing its intrinsic value to divers and other non-consumptive users. By 1998, a limited entry program was implemented for the commercial snapper grouper fishery to address overcapacity. That same year, the Council developed its comprehensive Habitat Plan, recognizing the importance of designating and protecting Essential Fish Habitat and Habitat Areas of Particular Concern. Additional measures to protect deepwater corals, designate marine protected areas, and other managed areas would follow. More recently, implementation of annual catch limits and accountability measures are working to end overfishing and rebuild economically important fish stocks, such as black sea bass. Of the 73 species managed by the Council, only four are considered overfished, and all are in the snapper grouper management complex.



Photo Credit – SAFMC

Stakeholders and the Council's advisory panels continue to provide grass roots guidance and recommendations as part of the management process. Some of the same fishermen that had participated in unregulated fisheries prior to implementation of the Magnuson-Stevens Act now serve on the Council's advisory panels, often advocating for stronger protection measures and improvements in data collection. The Council continues to face challenges including regulatory discards and their negative impacts on some fisheries such as red snapper.

Protecting Fish Habitat

German U-boat captains are believed to have been the first to discover deepwater corals off the east coast of Florida during WWII as they hid their vessels among tall coral pinnacles. In the late 1970s and early 1980s, John Reed, Chief Scientist with the Harbor Branch Oceanographic Institution described the *Oculina* coral reefs using a submersible, documenting the biodiversity of the fish and invertebrates found there, and later, the damage to the corals by fishing gear. In 1984, the Council banned



Photo Credit – USF/HBOI



destructive fishing gear in the area, creating the world's first deepwater coral marine protected area. Additional measures were implemented to further protect snapper grouper species there with subsequent spatial expansions of the area in 2000 and again in 2014.

Further research of deepwater coral habitats led to the Council's designation of five areas as Deepwater Coral Habitat Areas of Particular Concern in 2010, with the areas encompassing more than 23,000 square miles (the size of the state of West Virginia). The designation, made in collaboration with fishermen and scientists, restricts destructive fishing gear in these sensitive habitats and adds another layer of protection against oil and gas exploration and other possible threats.

The Council also worked closely with stakeholders and scientists over several years in designating eight Deepwater Marine Protected Areas (MPAs). Implemented

in 2009, the MPAs are designed to help protect long-lived, deepwater snapper grouper species such as snowy grouper, speckled hind, and blueline tilefish. In March of 2016, the Council approved the establishment of five Spawning Special Management Zones (SMZs), targeting specific habitats where spawning occurs for snapper grouper species such as speckled hind and warsaw grouper, two species that have been candidates for listing as threatened under the Endangered Species Act. System Management Plans, outlining research and monitoring, law enforcement, and outreach needs have been developed for these managed areas. Cooperative research with fishermen contributed to the data used for designating the proposed Spawning SMZs, and will continue to play a major role in the future of habitat protection and managed areas.



Photo Credit – SAFMC

SEDAR: Improving Stock Assessments

Accurate, timely stock assessments are critical for successful management. Initially, NOAA Fisheries conducted stock assessments internally, without input from fishermen or outside data collectors and scientists, and the assessments were reviewed by the Council's Scientific and Statistical Committees (SSCs) or Assessment Panels. There was little transparency, reviews rarely delved into the finer details of modeling methods and input datasets, and the reviewers rarely had the time or even experience required to truly evaluate complex quantitative models. As a result, assessments and assessment scientists often faced harsh criticism from both Council members and stakeholders, and it was not uncommon for a state to present new data, not included in the assessment, at a Council meeting. This process was not good for the Councils or NOAA Fisheries.



In 2001, the South Atlantic Council worked with NOAA Fisheries to create the SouthEast Data, Assessment, and Review (SEDAR) program to improve stock assessment quality, reliability, and transparency. Designed as a Council process, SEDAR is organized around a series of open, public workshops: a data workshop where data are evaluated and compiled, an assessment workshop where assessment models are prepared and refined, and an independent panel peer review workshop. Through these workshops, the Council is able to appoint a wide variety of participants to the process, including fishermen, researchers, state agency data collectors and managers, and SSC representatives.

After initial success in the South Atlantic, SEDAR expanded in 2003 to include the Gulf of Mexico and Caribbean Councils and the Gulf and Atlantic States Marine Fisheries Commissions, and again in 2008 to include NOAA Fisheries Highly Migratory Species Division. SEDAR is administered through the South Atlantic Council with oversight and program direction provided by a Steering Committee on which all the cooperating Councils, Commissions, and NOAA Fisheries offices have a voice. One of the most important tasks of the Steering Committee is deciding annual assessment priorities, and while needs still far exceed available resources, through SEDAR the Councils have increased their influence in determining assessment priorities.



Photo Credit – SAFMC

In the last 15 years, SEDAR has held over 100 workshops providing 110 stock assessments for 38 different stocks. Note that a single SEDAR may address more than one species. Additional workshops devoted to improving assessment methods and data evaluation are held regularly. While this is a marked improvement in assessment productivity when compared to the prior 15 years, many unassessed stocks and dated assessments remain within the Southeast, and SEDAR continues to seek new and better ways to address Council assessment needs.

Looking to the Future – Solutions for Better Management

The Council continues to recognize the challenges of ensuring adequate and timely science to support management despite limited resources, a multitude of species to manage, and a complex and highly diverse ecosystem. Improving data collection programs, enhancing reporting mechanisms and technologies across fishery sectors (e.g., weekly electronic reporting), and reducing bycatch have risen to the top, as the most critical issues the Council must address to continue successful management efforts. Stakeholders in the region echoed this sentiment during the Council's Visioning Project to develop a long-term plan for managing the snapper grouper fishery. To find creative solutions that challenge the often-reactionary approach to management, the Council will develop collaborative approaches to address data shortcomings that will focus on citizen science and engagement of fishery stakeholders.

The Council aims to create a Citizen Science program that will work in cooperation with state and federal agencies, scientists, fishery stakeholders and other organizations to support projects that will increase the region's data gathering capacity and help resolve long-standing data needs. Complementary programs, such as the Marine Resource Education Program Southeast that trains fishermen on fishery science and management, will continue to teach fishery stakeholders how to effectively participate in the management process. These efforts will support robust data collection efforts that supplement existing programs to minimize scientific uncertainties, streamline and better inform management, and improve credibility with stakeholders by giving them ownership in the science that drives management. The equation for the future includes more collaboration + more data + more trust = better management.



Photo Credit – SAFMC



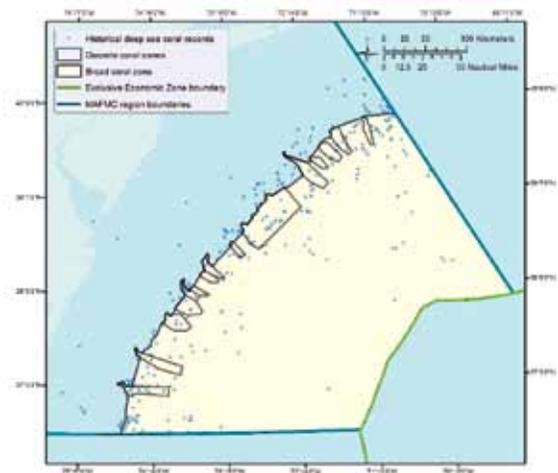
Mid-Atlantic Council

The Mid-Atlantic Fishery Management Council is responsible for the management and conservation of fishery resources in the Mid-Atlantic region, which extends from New York to North Carolina. The following describes several major milestones in the Council's history that have shaped the fisheries and management programs that exist today.

Deep Sea Coral Protection

In the decades since the passage of the Magnuson-Stevens Act, marine researchers have discovered highly diverse deep sea coral communities on the continental shelf and slope off the east coast. The 2006 reauthorization of the MSA included discretionary provisions which gave regional fishery management councils the authority to designate zones where, and periods when, fishing may be restricted in order to protect deep sea corals. In 2015, the Mid-Atlantic Council became the first of the eight councils to exercise this authority when it passed an amendment to protect deep sea corals from the impacts of bottom-tending fishing gear in the Mid-Atlantic.

The Council's Deep Sea Corals Amendment, which is currently under review by the Secretary of Commerce, proposes the designation of "deep sea coral zones," within which the use of most types of bottom-tending fishing gear would be prohibited. The zones include only areas within the Mid-Atlantic Council Region.



Proposed broad and discrete deep sea coral zones in the Mid-Atlantic Council region.

Two types of spatially overlapping coral zones were approved:

- A broad coral zone, consisting of a large, deep area, the vast majority of which is beyond the depths of current fishing effort. This area is intended to limit and prevent the expansion of current commercial gear use into these deeper areas.
- A set of fifteen discrete coral zones, which are smaller areas of known or highly likely coral presence. These include specific offshore canyons and slope areas.

The boundaries for the discrete coral zones were developed through a collaborative process during a workshop attended by members of the Council's advisory panels, deep sea coral experts, industry members, and other stakeholders. The end result was a set of consensus boundaries designed to protect corals while limiting impacts to the fishing industry.

Within these zones, the Council recommended prohibiting all bottom-tending gear types, with an exemption for the deep sea red crab trap fishery. The proposed measures also would not apply to the American lobster trap fishery or other fisheries managed only by the Atlantic States Marine Fisheries Commission (ASMFC).

The Council voted to name the proposed deep sea coral zones the "Frank R. Lautenberg Deep Sea Coral Protection Area," in honor of the late Senator Frank Lautenberg, a five-term United States senator from New Jersey. He authored several provisions included in the reauthorized MSA, including the discretionary provisions giving the Councils the authority to protect coral habitat areas from fishing gear.

Building Stakeholder Engagement through Visioning and Strategic Planning



Photo Credit – MAFMC

Many stakeholders who interacted with the Council during the years when several fisheries were simultaneously undergoing rebuilding felt that the fisheries management process was unresponsive to their input. This sentiment resulted in widespread frustration with the Council and low levels of stakeholder participation.

In response to these concerns, the Council launched the Visioning and Strategic Planning Project in 2011 with the objective of developing a "stakeholder-driven" strategic plan for Mid-Atlantic fisheries. The Council spent

nearly a year collecting and analyzing input from stakeholders throughout the Northeast region. More than 1,500 individuals provided input and ideas for the plan through online surveys and position letters. Council members and staff also held roundtable meetings with fishermen in ports from North Carolina to Massachusetts to discuss their observations and ideas for improving management of Mid-Atlantic fisheries.

Based on this visioning project, the Council developed and approved its first-ever strategic plan in 2013, in addition to mapping out a series of goals and strategies to guide the Council's management activities over the next five years, the plan is organized around four priority areas: Communication, Governance, Science, and Management. Each section includes a single goal with a series of objectives and strategies. In total, the plan includes 18 objectives and 78 strategies. The strategic plan has played an important role in helping the Council make progress on long-term projects, such as development of an Ecosystem Approach to Fisheries Management.

Summer Flounder Rebuilding

Much of the Council's management history has been defined by efforts to meet the MSA's requirement to rebuild overfished stocks. Perhaps the most important and challenging rebuilding process involved the summer flounder fishery. Summer flounder is one of the most important commercial and recreational fisheries in the Mid-Atlantic region.

Federal management of the summer flounder fishery began in 1988 through the implementation of a fishery management plan developed jointly by the Mid-Atlantic Council and the ASMFC. Unfortunately, during this first year of management, the stock experienced a major recruitment failure and very high exploitation rates, leading to the lowest levels of stock biomass on record. The Council and ASMFC responded to the decline by implementing a series of management measures to rebuild the stock. However, stock assessments conducted in the mid-1990s indicated that summer flounder abundance was not increasing as rapidly as originally projected.



Photo Credit – MAFMC

In addition, in a landmark case in 2000 (*Natural Resource Defense Council v. Daley*), the United States Court of Appeals found that the 1999 quota for summer flounder was unreasonable and ordered that harvest limits must have at least a 50% probability of achieving the target fishing mortality rate. A rebuilding plan was implemented in 2000, which reduced catch levels and resulted in an increase in stock biomass. In 2011, NOAA Fisheries declared the summer flounder stock fully rebuilt.

Despite this success, the Council continues to face challenges with the management of the fishery. Although the stock is not currently overfished, the 2015 stock assessment indicated that the stock was subject to overfishing. In response, the Council recommended reductions in harvest levels to be phased in over a three-year period beginning in 2016.

Surfclam and Ocean Quahog Fisheries: First Federal ITQ System

The Mid-Atlantic Council's fishery management plan for Atlantic surfclams and ocean quahogs was one of the first plans to be implemented under the authority of the MSA. Implemented in 1977, it established annual harvest quotas as the primary management tool for both fisheries, and also included measures to limit entry into the surfclam fishery.

As surfclams became more intensely exploited during the decade following plan implementation, the industry faced large surfclam minimum size limits, closed areas, discard restrictions, and significant reductions in the hours they could fish. By the mid-1980s, effort limitation combined with overcapacity in the fishery meant that capacity utilization was very low, with vessels operating only 6 hours every other week.



Photo Credit – MAFMC

In an effort to address these issues, the Council adopted the nation's first federal Individual Transferable Quota management system in 1990. This system allocated shares to vessel owners based on a formula including historical catch and vessel size. As a result,

economic efficiency improved, the derby fishing behavior was eliminated, and management monitoring decreased. In addition, the initial ITQ implementation also led to consolidation and displacement of labor, particularly for non-vessel owning captains and crew, and from 1990 to 2005 the surfclam fleet size decreased by about 70%.



New England Council

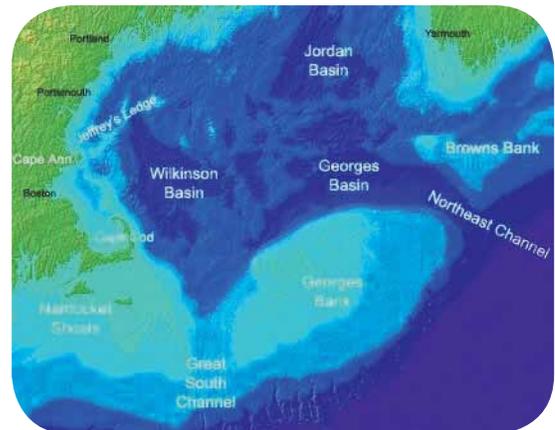
Along with the many changes that have occurred as a result of the Magnuson-Stevens Fishery Conservation and Management Act and its attendant reauthorizations, one of the most important is the recognition by both the industry and the public that the fish harvested in U.S. waters are valuable and renewable resources. To ensure this is the case, the Act mandates that overfishing must be prevented and overfished stocks rebuilt. Annual limits on the amount of fish that can be caught are required, overages are accounted for and consequences codified, and decision making is based on the best available science. Toward that end, the eight regional fishery councils continue to develop fishery management plans that govern fisheries in federal waters and have developed unique tools to accomplish that task. A few of these innovations are detailed below.

Background

Nine New England fishery management plans and programs are in effect in the region, with two prepared jointly with the Mid-Atlantic Fishery Management Council. These fishery management plans address 29 marine and one anadromous species. A proposed action that could better protect sensitive groundfish and other important habitats off the coasts of our region is under review by NOAA Fisheries.

Rotational Area Management

Among the best known of the Council's managed species is the Atlantic sea scallop. For more than a decade sea scallops, the target of a lucrative fishery, have allowed New Bedford to claim the title of top port in the U.S. in terms of the value of its landings. Continued success, however, was elusive during the 1980s and 1990s as harvesting patterns continued to follow boom and bust cycles. What changed?



U.S. Geological Survey/Geological Survey of CA/ Woods Hole Field Center

The resource rebounded as a result of a number of circumstances: in 1994 the Council implemented management measures that effectively reduced fishing mortality and increased the size of scallops landed; scallop vessels were excluded from several highly productive scalloping areas on Georges Bank to protect overfished groundfish stocks, resulting in large populations of scallops within the closed areas; and an extraordinary abundance of spawning age scallops appeared in the same areas as well as in the Mid-Atlantic. The result was that, beginning in 1999, sea scallop landings increased exponentially, producing benefits to both the industry and consumers.

The management tool that has allowed this success to continue was a system of limited scallop harvesting in specific areas on Georges Bank and in the Mid-Atlantic that operates in a manner similar to the crop rotation programs used in agriculture. Small scallops remain unharvested until they reach sufficient size to produce the greatest benefits to the fishery and consumers. Coupled with high levels of observer coverage and multiple surveys conducted annually, the continuation of a profitable, sustainable fishery is reasonably ensured for decades to come.

Research Set-Asides

Research Set-Aside (RSA) programs are unique to federal fisheries that operate in the Northeast. While the Council established these programs in its fishery management plans, the Northeast Fisheries Science Center's Cooperative Research Program manages them without expending federal funds to support the research. Instead, funding for fisheries-specific research is provided by the sale of "set-aside allocations" in quota managed fisheries or other mechanisms. This can be a fixed poundage, as in the case of the scallop fishery, or a percentage of an annual quota, or a percentage of the year's total allowed fishing days. Money

generated by the sale of the RSA catch funds proposed research that is evaluated through a competitive proposal and awards process. Compensation for vessels harvesting the quota is also accounted for in the RSA award.



Photo Credit – MA Division of Marine Resources

The scallop RSA, developed in 1999, is the largest of these programs, but the Council has established similar programs in the herring and monkfish fisheries. Work is accomplished when research institutions partner with fishermen and apply for a portion of the set-aside, which is harvested and sold to fund the research. Project partners team up to apply for some portion of each set-aside in a competitive awards process.

Importantly, incentives are provided as vessels fish on their “set-aside” days or harvest the quota. They frequently receive exemptions from trip limits, some seasonal closures, or other restrictions that otherwise would apply. Equally important are the relationships that are forged. In addition to better information for management, other benefits include a mutual understanding of the value of scientific research and the operational aspects of harvesting fish, as well as the overall perspective each partner brings to the collaboration.

In addition to the RSA programs, New England fishermen have an extensive record of successful collaborative research activities, often funded by NOAA grants. Many groundfish-related projects have contributed directly to decision making by the region’s fishery officials. These include: resource surveys conducted aboard commercial fishing vessels, which in turn contribute data for stock assessments; specialized fishing gear developed to avoid or minimize contact with endangered species such as sturgeon and sea turtles; and gear that minimizes the catch of some overfished groundfish species during the harvest of healthy stocks and reduces the wasteful discards of less commercially valuable species

Other fisheries

Other stocks under New England Fishery Management Council management, in addition to the three mentioned above—sea scallops, Atlantic herring and monkfish—support healthy, sustainably managed fisheries. The small Atlantic deep-sea red crab fishery that fishes along the edge of the continental shelf has been operating without overfishing for over a decade by using long-term average landings. The five stocks managed through the small mesh multispecies program, which include silver and red hake, have been fully rebuilt and provide a buffer for groundfish fishermen who seek to reduce their landings of cod and a number of flounder species. Many are overfished and the subject of very restrictive rebuilding programs. The conundrum the NEFMC and fishermen face is that both cod and flounders are harvested along with fully recovered groundfish species. These include haddock, particularly the Georges Bank stock, which is at an all-time high; as well as redfish and pollock, each of which contribute significantly to the economic viability of the groundfish fishery.



Photo Credit – NEFMC

What does the future hold?

Even as the outward manifestations of fisheries management have changed, many of the basics remain the same - a fair, equitable and deliberative management process that engages fishery participants in developing future solutions; adequate scientific and socio-economic information on which to base our programs; efficient reporting and cost-effective catch monitoring mechanisms; and the ability to adapt to climate-driven or other challenges that often confront and even confound the work of the regional councils.



Photo Credit – Tim Tower, F/V Bunny Clark



North Pacific Council

The North Pacific Council develops management plans and measures for the commercial groundfish fisheries off Alaska, as well as the crab and scallop fisheries (working jointly with the State of Alaska). The following describes several major actions that have shaped the fisheries and management programs we have today.

Americanization of the Fleet

When the Fishery Conservation and Management Act was passed, a vast majority of the fisheries off Alaska were being prosecuted by foreign vessels. In 1976, over 400 foreign trawl vessels (from Japan, USSR, South Korea, Poland, and Taiwan) were operating off Alaska, mainly targeting yellowfin sole, Pacific ocean perch, and pollock. Together with the Japanese longliners targeting sablefish, rockfish, and Greenland turbot, these foreign fleets were landing over 1.5 million tons of groundfish annually. Although domestic fisheries had developed for salmon, halibut, and red king crab, U.S. fishermen had not targeted groundfish or other resources, and these fisheries were entirely prosecuted by the large foreign fleets.

One of the primary objectives of the Act was to “Americanize” the fisheries. To accomplish this goal, the Act required that domestic fisheries operations be given first preference in the allocation of optimum yield. This objective was further enhanced in 1980 by the American Fisheries Promotion Act (more commonly known as the ‘fish and chips’ policy), which provided that foreign allocations could be based on that country’s contribution to development of the U.S. fishing industry. In most cases, the contributions were made through the use of



Photo Credit - NPFMC

joint-venture contracts, whereby U.S. vessels would deliver their catch to foreign processing vessels. The fish and chips policy provided the financial incentives and opportunity for development of a domestic groundfish fleet.

By 1987, joint ventures of U.S. catcher vessels delivering to foreign motherships accounted for about 75% of the groundfish catch off Alaska, and by 1991, all the catch was harvested by U.S. vessels. Throughout this time, the domestic fleet targeting groundfish (not including halibut) grew from a single vessel in 1979, to nearly 200 vessels in 1986, to over 2,200 vessels in 1992.

Limiting Access

By the early 1990s, the burgeoning domestic fleet had grown to the point where increased competition from new entrants was exacerbating the problems associated with the race for fish. The Council determined that a limited entry program was needed, and in 1995, a moratorium on entry of new vessels was implemented to limit speculative entry into the groundfish fisheries while a more comprehensive program was being developed.



Photo Credit - NPFMC

A license limitation program was implemented in 1999 to limit access to all federal groundfish and crab fisheries, with qualifications based on historic participation in the fisheries. Upon implementation, licenses carried one or more fishing area endorsements (Bering Sea, Aleutian Islands, and the Central, Western and Southeast Gulf of Alaska), designations for operation type (catcher processor or catcher vessel), gear type (trawl and/or fixed gear), and maximum vessel length. A few years later, the Council established a Pacific cod endorsement for fixed gear (hook-and-line and pot) vessels longer than 60 feet fishing in the Bering Sea, and Pacific cod endorsements for fixed gear (pot, longline, and jig) in the Gulf of Alaska. In 2008 and 2009, the Council took action to

remove trawl and fixed-gear licenses that had little or no recent participation in the fisheries to prevent these permits from being activated and increasing competition with established operations. The license limitation program put restrictions on the areas a fishermen could fish, whether or not they could process onboard, the gear type they could use, the size of vessel they could use, and the fisheries they could target. By defining the universe of participants, the license limitation program set the stage for later apportionment and total allowable catch allocation among sectors and among individual vessels.

Catch Share Programs

The limited entry programs developed by the Council were a stop-gap measure to control participation in the fisheries, but it did not end the race for fish and associated problems including short seasons, safety concerns, catching and processing capacity, and economic inefficiencies. Early on, the Council was able to address the severely overcapitalized halibut and sablefish fishery with an Individual Fishing Quota (IFQ) program that was fully operational beginning in 1995. For other fisheries, however, measures to address overcapacity were limited, as the Act had been amended to include a 6-year (1995-2000) moratorium on development of new IFQ systems.

Following the Council's decision on the third iteration of the Bering Sea pollock inshore/offshore allocation in June 1998, representatives from the different sectors sought congressional intervention and received it in the form of the American Fisheries Act, which was signed into law in October 1998. The American Fisheries Act contained several major provisions: U.S. ownership requirements, a permit/vessel buyout, a listing of qualified vessels, processor eligibility requirements, revised sector allocations, an increased Community Development Quota pollock allocation, an allowance for fishery cooperatives, and sideboard provisions. The American Fisheries Act eliminated the race for Bering Sea and Aleutian Islands pollock through the establishment of cooperatives, which allowed for reduced capacity, reduced bycatch, increased efficiency, and increased the amount of fish utilized.



Photo Credit - PVOA

The halibut and sablefish IFQ and American Fisheries Act cooperative catch share programs proved to be so successful that programs to rationalize the other major fisheries soon followed: Bering Sea and Aleutian Islands crab fisheries in 2005, the Central Gulf of Alaska rockfish fisheries in 2007, and the Bering Sea and Aleutian Islands groundfish trawl catcher-processors in 2008. Voluntary cooperative programs have been self-implemented by the longline catcher-processor fleet and the small Alaska scallop fleet. The Council is currently examining options to address bycatch issues associated with the Gulf of Alaska trawl fisheries, which still operate as derby-style fisheries.

Controlling Bycatch

Bycatch controls in the North Pacific were instituted on foreign fisheries prior to passage of the MSA to reduce the impacts on species traditionally harvested by the domestic fleet. By 1990, it was clear that the domestic fisheries, which had taken over the harvest from the foreign fisheries, could not be adequately managed without an at-sea observer monitoring program to collect data on total catch, including at-sea discards. The Council developed a comprehensive industry-funded observer program to improve catch accounting and monitoring. The program, implemented in 1990, allowed for prohibited species bycatch to be accurately monitored and limits to be imposed on the domestic fleets. These limits have been reduced several times over the years, particularly during periods of crab, halibut, and salmon stock declines.



Photo Credit - Sea Alliance

In addition to prohibited species bycatch, the Council has taken measures to reduce bycatch and waste of other fish species. Although not a conservation concern (all discards are accounted for and accrue towards the total catch quotas for each species), reducing discards that could have been retained for human consumption has been a concern. The Council implemented full retention requirements—you catch it, you keep it—for pollock and cod beginning in 1998, and set minimum retention standards for flatfish taken on larger vessels. Reducing bycatch was also a major objective in the design of catch share programs. Eliminating the race to fish with rationalized fisheries cooperatives has allowed for more selective fishing practices, development of additional markets for lower valued species, and significantly increased utilization rates (pound of product per pound of fish harvested). These actions have reduced groundfish discards from 17% in 1993 to only 4% in 2014.

Looking Ahead

The success of the North Pacific Council at achieving sustainable and profitable fisheries is in part due to functional and effective partnerships with federal and state agencies, the fishing industry, and other stakeholders. There is a shared responsibility and trust in the process. The fishing industry steps up to fund the observer program, engage in cooperative research with scientists, and support science-based catch limits and other regulations when needed. The Council, in turn, listens closely to the fishing industry and other stakeholders and addresses issues that arise through an open and public process. The Council has also entrusted the industry cooperatives to address management concerns that can not be addressed by regulations in an effective or timely manner. Continued success will depend on building on these partnerships and working together toward a shared goal of sustainable and profitable fisheries.



Western Pacific Council

The Western Pacific Council has authority over fisheries seaward of state/territorial waters of Hawaii, American Samoa, Guam, the Commonwealth of the Northern Mariana Islands and eight U.S. possessions. Spanning both sides of the dateline and equator, these islands share a rich history of marine resource use and management predating the Magnuson-Stevens Fishery Conservation and Management Act (MSA) by millennia. Samoan, Hawaiian, Chamorro and Refaluwasch followed seasonal, site-specific practices; understood fluxes of abundance and scarcity and the interrelatedness of air, land and sea; and held traditional values of community sharing, planning for future generations and respecting the kinship among humans, nature and spirits. During the past 40 years, the Western Pacific Council has used Western science, indigenous wisdom and traditional knowledge of immigrant fishing communities to develop conservation and management measures under its jurisdiction.

Taming the Wild Northwestern Islands

Among the Council's first acts was bridling rampant foreign fishing in the Northwestern Hawaiian Islands (NWHI). These remote islands and atolls stretch 1,200 miles beyond the populated main Hawaiian Islands. Japanese and Taiwanese vessels devastated the ocean floor, dragging tangle nets weighted with heavy stones to harvest deep-water coral for the ornamental trade. Japanese and Russian vessels overfished armorhead at Hancock Seamount, leaving one percent of the stock.

The Council addressed these and other regional concerns through Fishery Management Plans for Precious Corals (1983), Crustaceans (1983) and Bottomfish and Seamount Groundfish (1986). These fishery management plans and amendments established gear restrictions, such as banning bottom trawling and poisoning throughout the region's 1.4 million square nautical miles; moratoria on gold coral and on the seamount fishery at Hancock, now an



ecosystem management area; precious coral and crustacean refugia, including a no-take lobster zone within 20 nautical miles of Laysan Island and no-take zones 0 to 10 nautical miles around the eight Pacific Remote Island Areas; and conservative quota programs, such as the NWHI bank-specific retain-all lobster quotas of only 13 percent of the exploitable biomass with a 10 percent risk of overfishing supported by real-time reporting. To aid with enforcement, the Council pioneered the vessel monitoring system that is now used globally to track fishing fleets. The Bottomfish Fishery Management Plan included two of the nation's first limited entry programs.

These fishery management plans supported sustainable, domestic fisheries, such as the NWHI fishery for prized deep-water snappers that accounted for half of Hawaii's local bottomfish landings. This fishery was closed by Presidential executive order proclaiming the Northwestern Hawaiian Islands as the nation's first marine national monument, which continues to account for virtually all of the nation's no-take waters.

Including Tuna

While the MSA ended much foreign fishing in federal waters, their fleets continued to longline up to state waters because tunas were exempt. Tunas are the major fishery in the U.S. Pacific Islands,



Photo Credit - WPFMC

constituting about 90 percent of the fishery in landed value.

They were the targeted species for non-commercial fishermen, the pole-and-line skipjack fishery supplying local canneries and Hawaii's flagline fishery for yellowfin tuna. Inability to manage tuna was an affront to the region. The Council cleverly addressed the problem by managing billfish, which comprised 20 percent of the foreign tuna longline catch. Billfish is an important recreational species in the region, with Kona the renowned marlin capital of the world. The Pacific Pelagic Fishery Management Plan (1987) also covered dolphinfish, wahoo, oceanic sharks and other species.

In 1990, the MSA was amended to include tuna. About this time, Atlantic and Gulf longliners inundated Hawaii. From 1987 to 1991, the Honolulu fleet swelled from 37 to 156 vessels. The influx increased longline interactions with local small-scale fisheries and protected species. To meet these and ensuing challenges, the Council established an exclusion zone out to 25 to 75 nautical miles from shore around the Main Hawaiian Islands; a Protected Species Zone out to 50 nautical miles in the Northwestern Hawaiian Islands; mandatory vessel monitoring systems; limited entry (164 permits); 101-foot maximum vessel length; and mandatory protected species workshops and mitigation techniques. Simple changes

in fishing methods reduced sea turtle and seabird interactions by nearly 90 percent and are now globally adopted techniques. The Council helped organize and fund four International Fishers Forums, the Bellagio Conference on Sea Turtles, numerous protected species projects throughout the region, and publications of proceedings, such as *Conservation of Pacific Sea Turtles* (University of Hawaii Press). The Council continues work to monitor and minimize interactions with protected species, such as false killer whales.

Today, the Hawaii longline fishery is worth \$100 million and Honolulu consistently ranks as one of the nation's top 10 ports in value of seafood landings. Third-party assessments rated the Hawaii and American Samoa longline fisheries as more than 90 percent compliant with the UN Food and Agriculture Organization's Code of Conduct for Responsible Fisheries. Despite international recognition as a model fishery, the Hawaii fleet faces daunting challenges. It is the only Pacific longline fishery to be closed after reaching the national quotas set by international fishery management organizations. The Council organized four of the seven multilateral, high-level conferences that established the Western and Central Pacific Fisheries Commission. Now decisions by it and the Inter-American Tropical Tuna Commission have created an unlevel playing field, with arbitrary catch allocations and largely non-existent foreign monitoring and enforcement.

Pioneering Ecosystem-Based Management

In 1987, the Council began developing its Coral Reef Ecosystem Fishery Management Plan. Text from the draft plan and the boundaries of the Council's NWHI Protected Species Zone were appropriated to create the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve and eventually the Papahānaumokuākea Marine National Monument. Implementation of the nation's first ecosystem-based fishery management plan was stalled until 2001 and then implemented minus the NWHI section.

In 2006 and 2007, the Council hosted a series of national workshops on ecosystem-based management (*Ecosystem-Based Fisheries Management in the Eastern Pacific*, published by Wiley-Blackwell) while transforming its five species-based fishery management plans into place-based fishery ecosystem plans. The plans were approved by the Council in 2007 and the Secretary of Commerce in 2009. Regional Ecosystem Advisory Committees, created on each archipelago, increased participation by communities and agencies not typically involved in fisheries management.



Photo Credit - WPFMC

In 2015, after a five-year review, the Council modified the fishery ecosystem plans to strengthen their ecosystem components. The plans' annual reports now include protected species, climate change, marine planning, fishing communities, essential fish habitat and traditional knowledge sections.

Ensuring Native Rights

The 1996 reauthorized MSA recognized indigenous fishing rights for native peoples and the unique historical, cultural, legal, political and geographical circumstances of the Pacific Insular Areas and the critical importance of fisheries resources for their economic growth. It established the Community Development Program, Community Demonstration Project Program and Marine Education and Training Program to support traditional fishing communities, helping the Council to continue its work with native fishing rights.

The Council has researched native fishing in the region, worked to establish Community Development Programs in the NWHI bottomfish fishery and the Hawaii flagline fishery and created an Indigenous Fishing Rights Committee and Indigenous Fishing Communities Advisory Panel subgroups. Between 2002 and 2005, it funded 13 Community Demonstration Projects and supported the development of the Native Observer program, the America Samoa village marine protected area program and exemptions to



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allow traditional harvest of *manahak*, *tiao* and *i'i* in the Marianas. It hosted conferences in Hawaii (*Tradition-Based Natural Resources Management: Practices and Application in the Hawaiian Islands*, to be published by Palgrave MacMillan) that led to official recognition of the traditional 'Aha Moku management system and creation of the 'Aha Moku Advisory Committee in the State's Department of Land and Natural Resources. It promotes the rights of non-commercial "customary exchange" of fish taken in the nation's marine monuments—Papahānaumokuākea, Marianas Trench, Pacific Remote Islands and Rose Atoll—all of which are in the Western Pacific Region, impacting 28 percent of the area's exclusive economic zone. Military restrictions also have significant impacts on traditional fishing grounds. The Council established a Marine Planning and Climate Change Committee, policy and action plan; hosted coastal and marine spatial planning community workshops and an international Fisheries Legislation and Community-Based Fisheries Management Workshop; and supports community-based fishery management. It was a principal organizer of the First Stewards Symposia on climate change and indigenous communities and led the Pacific Island participants to these Washington, DC, events.

Building Capacity for the Future

Looking ahead, the Council has embarked on projects to develop local fisheries and improve local fisheries science and management capacity.

The Marine Conservation Plans approved by the Council and Secretary of Commerce support a suite of fisheries studies and infrastructure development. Recent Council-funded projects include boat ramps, ice and fuel houses, docks, fishing platforms, fishermen workshops and studies, for example, the use of fish processing waste.

Improving data collection and research is also high on the Council's agenda. The Council has helped to develop a model for data-poor fisheries to improve the specification of annual catch limits; enhance data collection from biosampling, creel surveys and fishing supply chains; and create the Pelagic Fisheries Research Program, Fisheries Data Collection and Research Committee and Pacific Islands Fisheries Research Program.

To ensure an informed public and future generations of local fishery scientists and managers, the Council places an importance on education and outreach. It conducts annual high school summer courses on marine fisheries and management, student art and photo-essay contests and symposia, scholarship and internship programs, teacher workshops and Fishers Forums. Its Education Committee orchestrated a Memorandum of Understanding among fishery agencies and educational institutions in the region. It produces traditional lunar calendars, posters, videos and other educational resources in English and indigenous languages; convened the International Pacific Marine Educators conference, which launched the International Pacific Marine Educators Network; and was instrumental in creating the National Marine Educators Association's Traditional Knowledge Committee.



Photo Credit - WPFMC



Pacific Council

Fisheries off the west coast of the U.S. have changed dramatically over the forty years since the Magnuson-Stevens Act was enacted. In the 1960s and 1970s, fisheries off Washington, Oregon and California were relatively unrestricted and unmanaged. Too many boats—both foreign and domestic—were pursuing the fish, while little was known about the status of stocks. These two elements combined were a recipe for overfishing.

Groundfish

In the decades before the MSA was enacted, a domestic groundfish fishery had not yet been developed, and groundfish were mainly targeted by foreign trawlers, often fishing within sight of west coast beaches. After passage of the MSA, the Exclusive Economic Zone was extended to 200 miles offshore, pushing foreign fleets away from the shoreline and leading to a transitional “joint venture” fishery where domestic catcher boats sold to foreign processing vessels. By the late 1980s and early 1990s, foreign catcher/processors and joint venture fisheries had been replaced with domestic vessels and processors, in part due to government subsidies for vessel and processing plant construction. In 1994 the first license limitation program was put in place for the groundfish fishery, followed by a 2001 sablefish catch share program.



Photo Credit - PFMC

In the early 1980s and 1990s stock assessment science was less sophisticated and had less data to work with. As a result, the abundance and estimates of sustainable harvest levels of some groundfish stocks were overestimated, leading to overfishing of several stocks. Rebuilding plans for some depleted groundfish stocks were put in place in the 2000s under the rebuilding requirements of the MSA, resulting in severe restrictions in the fishery, hardship to fishing communities, and increased regulatory

discards. As rebuilding strategies took effect, it became more difficult for vessels to sustain a profitable business plan, as the number of vessels in the fishery had to share fewer fish. In 2003, an industry-funded buyback of excess trawl permits removed almost half the historical harvest in the trawl fishery. Then, in 2011, the Council created a sophisticated multispecies catch share program for the limited entry trawl fishery that combines individual accountability with 100% observer coverage, resulting in a more sustainable and predictable groundfish fishery with much lower bycatch.

The rebuilding plans required by the MSA, and constant improvements in scientific understanding, have led to the rebuilding of five stocks that were overfished (Pacific whiting, lingcod, canary rockfish, widow rockfish, and petrale sole), and five others continue to be managed under rebuilding plans. Two of those five are thought to be currently rebuilt, a prediction requiring confirmation in stock assessments next year.

Salmon

Salmon have been a staple of west coast fisheries, and an important cultural symbol, for millennia. Passage of the MSA resulted in establishing the Pacific Council's Salmon Fishery Management Plan in 1977. Around that time several other factors came into play for salmon management, including the Boldt Decision and related court decisions, which allocated 50% of the salmon catch in Washington to certain tribes; the Pacific Salmon Treaty, and listings under the Endangered Species Act. Now, the Pacific Council manages annual ocean salmon fisheries through a complex, coordinated management process where ocean and inland, tribal and non-tribal, state and federal co-managers come together to negotiate sharing agreements and other management requirements. The designation of essential fish habitat for salmon under the MSA includes freshwater spawning, rearing, and migration areas, and has been instrumental in protecting and improving inland waterways, shorelines, and forest lands in areas as far from the ocean as the state of Idaho.



Photo Credit - California Dept. of Fish & Wildlife

Highly Migratory Species

Fisheries for highly migratory species—principally tunas and billfish—have a long history on the west coast, especially in California. West coast tuna landings peaked in the 1970s, and then declined for a variety of reasons, not least the closure of Southern California tuna canneries. Southern California fisheries declined precipitously through the 1980s and 90s. In 1981, landings in California from this fishery were valued at just over \$375 million in today's dollars; this had shrunk to less than \$15 million annually by the 1990s.

Recognizing the importance of highly migratory species to west coast fishing communities, the Pacific Council implemented a fishery management plan for west coast highly migratory species in 2004. Pole-and-line fisheries for albacore continue to be an important revenue earner, peaking recently in 2012. Modest commercial fisheries also target swordfish. Private sport boats and charter vessels target albacore up and down the west coast; in 2014, more than 40,000 angler trips targeted albacore. In Southern California anglers also catch Pacific bluefin when available, and charter vessels venture into the waters of Baja California, Mexico, to target yellowfin tuna. Through its fishery management plan, the Council has taken an active role in managing west coast highly migratory species fisheries and has also been able to engage in the international forums that are so important in managing these wide-ranging species.

Coastal Pelagic Species

Coastal pelagic species fisheries were largely managed by the states until 1998, when the Council expanded its anchovy plan to cover other west coast coastal pelagic species. Due in large part to



Photo Credit - National Ocean Service

MSA requirements, the Council banned krill fishing in 2006 and recently prohibited fishing of otherwise unmanaged forage fish. Based on the MSA's emphasis on ecosystem-based management, the council currently uses a sea temperature component to set harvest limits on sardines. Higher sea surface temperatures are associated with higher sardine populations, which allows more harvest; lower temperatures have the opposite effect. This proactive approach was among the first in the U.S. to incorporate ecosystem factors into fisheries management.

Ecosystem Management

In the 40 years since the MSA was enacted there has been an increasing focus on protecting essential fish habitats. Ecosystem-based management has grown from that focus. As a result, the Pacific Council has developed a fishery ecosystem plan, has implemented regular reports on ecosystem status, and has protected the forage fish that form the basis of the marine food chain.

All in all, the Council is moving toward a more responsive fisheries management strategy that relies on a wide variety of information, including clues from the ecosystem, to best understand the health of fish stocks and the human communities that depend on them.



Photo Credit - Jennifer Gilden

U.S. Regional Fishery Management Councils Joint Accomplishments

Managing Our Nation's Fisheries

The eight Regional Fishery Management Councils and the National Marine Fisheries Service (NOAA Fisheries) leadership regularly provide a forum to assess the status of our marine fisheries management programs, at a national and regional level. The Managing Our Nation's Fisheries conferences are an opportunity to explore potential improvements to national fishery management policy, particularly when the Magnuson-Stevens Fishery Conservation and Management Act (MSA) is due to be reauthorized by Congress. Information about and the proceedings of the conferences can be found at <http://www.managingfisheries.org/>.

Council Coordination Committee

The reauthorization of the MSA in 2007 established the Council Coordination Committee (CCC), which consists of the chairs, vice chairs, and executive directors from each regional fishery management council or other staff, as appropriate. The CCC meets twice each year to discuss issues relevant to all councils, including issues related to the implementation of the MSA. NOAA Fisheries hosts one meeting each year, and the second meeting is hosted by one of the Councils. Meeting documents are available at www.fisherycouncils.org.

- January 8–10, 2008, Silver Spring, MD
- May 5–9, 2008, St. Thomas, USVI (host: Caribbean Council)
- February 25–26, 2009, Silver Spring, MD
- May 19–22, Boston, MA (host: New England Council)
- January 13–14, 2010, Washington, DC
- May 19–20, 2010, Anchorage, AK (host: North Pacific Council)
- January 11–12, 2011, Washington, DC
- May 3–5, 2011, Charleston, SC (host: Mid-Atlantic Council)
- January 25–26, 2012, Silver Spring, MD
- May 2–3, 2012, Kohala Coast, HI (host: Western Pacific Council)
- February 20–21, 2013, Silver Spring, MD
- May 6–10, 2013, Washington, DC (host: Pacific Fishery Council)
- February 19–20, 2014, Washington, DC
- May 12–15, 2014, Virginia Beach, VA (host: South Atlantic Council)
- February 18–19, 2015, Washington, DC
- June 22–25, 2015, Key West, FL (host: Gulf of Mexico Council)
- February 24–25, 2016, Washington, DC
- May 24–26, 2016, St. Thomas, USVI (host: Caribbean Council)

National Scientific and Statistical Committee Workshops

In 2007 reauthorized MSA required that each regional fishery management council's Scientific and Statistical Committee (SSC) provide its Council ongoing scientific advice for fishery management decisions, including recommendations for acceptable biological catch (ABC), and other advice regarding the sustainability of fisheries. Beginning in 2008, the Councils began hosting National SSC Workshops. The proceedings are available at www.fisherycouncils.org.

- Developing Best Practices for SSCs, November 12–14, 2008, Honolulu, HI (host: Western Pacific Council)
- Establishing a Scientific Basis for Annual Catch Limits, November 10–13, 2009, St. Thomas, USVI (host: Caribbean Council)
- ABC Control Rule Implementation and Peer Review Procedures, October 19-21, 2010, Charleston, SC (host: South Atlantic Council)
- Ecosystem and Social Science Considerations in U.S. Federal Fishery Management, October 4-6, 2011, Williamsburg, VA (host: Mid-Atlantic Council)
- Providing Scientific Advice in the Face of Uncertainty: from Data to Climate and Ecosystems, February 23–25, 2015, Honolulu, HI (host: Western Pacific Council)

Outreach and Education

The Regional Councils work together to publish outreach and education publications and displays and to staff informational booths at events, such as the Capitol Hill Ocean Week conference and NOAA Fish Fry. Outreach materials can be downloaded at www.fisherycouncils.org.

- U.S. Regional Fishery Management Councils: Providing Sound Stewardship of Our Nation's Fishery Resources. 2009. Special Edition of Current: The Journal of Marine Education, Volume 25, Number 3. (64 pages)
- US Regional Fishery Management Councils Opportunities & Challenges. 2009. (40 pages)
- U.S. Regional Fishery Management Councils: Decades of Knowledge and Experience in Coastal and Marine Spatial Planning. 2010. (8 pages)
- Celebrating 40 Years of Regional Fisheries Management. 2016. (48 pages)



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<http://www.caribbeanfmc.com>



Gulf of Mexico Fishery Management Council
2203 N. Lois Avenue
Suite 1100
Tampa, FL 33607
<http://www.gulfcouncil.org>



South Atlantic Fishery Management Council
4055 Faber Place Drive
Suite 201
North Charleston, SC 29405
<http://www.safmc.net/>



Mid-Atlantic Fishery Management Council
800 N. State St.
Suite 201
Dover, DE 19901
<http://www.mafmc.org/>



New England
Fishery Management
Council

New England Fishery Management Council
50 Water Street, Mill 2
Newburyport, MA 01950
<http://www.nefmc.org/>



North Pacific Fishery Management Council
605 West 4th Avenue
Suite 306
Anchorage, Alaska 99501
<http://www.npfmc.org/>



Western Pacific Fishery Management Council
1164 Bishop Street, 1400
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<http://www.wpcouncil.org/>



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7700 NE Ambassador Place
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<http://www.fisherycouncils.org/>