

# *Conserving America's Marine Fisheries*



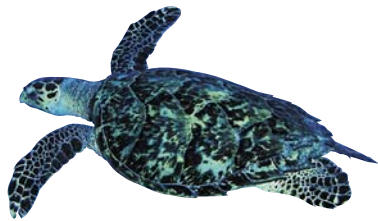
*A Quarter Century of Progress*



## *Introduction*

*In the 1970s, the public consciousness turned its attention toward the health and welfare of our nation's oceans. This unprecedented attention ushered in a suite of marine conservation laws that reshaped the way Americans viewed marine resources, our stewardship responsibilities, and the need to invest in marine science and management of ocean resources to redress excesses of the past and ensure a sustainable future. Over 25 years have passed since the passage of the Magnuson-Stevens Act. Now these laws and institutions are under public review to examine their effectiveness, revisit their goals, and determine what changes are necessary to build on current achievements and meet future challenges.*

*Central to these examinations will be a review of fisheries and living marine resources management. Dramatically strengthened by the Sustainable Fisheries Act in 1996, the fisheries management process is a dynamic and successful management regime that has evolved to meet new challenges. This document celebrates the public-private partnership of the regional fisheries management process and highlights the successes of management over our nation's marine fisheries and ecosystems.*



*This document provides information and examples of the achievements of the fisheries management process under the Magnuson-Stevens Act and the ability to advance stewardship and establish sustainable practices while adapting to the ever changing environment of marine ecosystems, scientific advancements, and social and economic pressures.*

*The fisheries management process has undergone dramatic change since the 1970s, when eliminating foreign fishing and developing domestic fisheries were the primary objectives. Today, the regional management framework established under the Magnuson-Stevens Act and strengthened by the Sustainable Fisheries Act has become the world's leading forum for advancing the science-based management of living marine resources.*

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# NOAA Fisheries



## REGIONAL FISHERIES MANAGEMENT . . . AN ARCHITECTURE FOR STEWARDSHIP

Within the framework of the fisheries management process, fisheries scientists and managers have developed an extensive body of scientific knowledge and technological innovations, and forged management strategies that are leading the way toward more comprehensive marine ecosystem management regimes.

With the establishment of the eight regional fishery management councils in 1976, a lasting public-private partnership was initiated between the stakeholders of a region's marine resources and the science and management of the National Marine Fisheries Service (NOAA Fisheries). From commercial, recreational and tribal fishermen to academia, science and conservation interests, the spectrum of vested views – unique to each region – contribute to the public deliberations and management strategies. Like most democratic forums, the fisheries management process is often daunting and contentious, with differing views over the science on which management strategies are based and the socio-economic concerns on which fishery allocations are made.

Although some management decisions in the past did not result in the desired success, the fisheries management process has allowed the nation to learn from mistakes, invest in the science, and respond with innovative strategies that have led to additional discoveries and progress. These dynamics have evolved into a science-based process in which management decisions are premised on the need to minimize negative

impacts, establish sustainable practices and responsive strategies, and maximize the long-term socio-economic benefits on which much of our cultural heritage relies.

Evaluating the effectiveness of the nation's fisheries management process must, therefore, be viewed as an evolutionary process that continues today. After more than 25 years, the collaborative stewardship between NOAA Fisheries, the regional councils, and our constituents has produced a world-class body of science and management strategies that are leading the way toward ecosystem management, international stewardship, and most importantly, the successful rebuilding and sustainable harvesting of our nation's fisheries.

The following sections highlight the important contributions the agency, the councils and our constituents have made over the last decade toward sustaining the health of our oceans.

## THE SUSTAINABLE FISHERIES ACT . . . PROGRESS IN STEWARDSHIP

Nearly six years have passed since we began implementing the Sustainable Fisheries Act (SFA) of 1996. Under the SFA, Congress provided fisheries managers with rigorous management standards to better address human impacts on the environment and to enact more proactive management strategies. The SFA presented many new mandates, with the fundamental goals of preventing overfishing, rebuilding overfished stocks, protecting essential fish habitat (EFH), minimizing bycatch, enhancing research and improving

monitoring and compliance. The SFA also called for greater consideration of fishing communities and safety at sea, the formation of constituent advisory panels, and analysis of fishing capacity, among other activities. NOAA Fisheries and the regional fishery management councils have worked tirelessly with constituents and stakeholders to evolve the process further – making management goals more comprehensive and measurably accountable.

## STATUS OF STOCKS

Though fish stocks will take many years to recover from overfishing practices of the past, the councils and NOAA Fisheries are well on the way toward meeting this challenge. In the last five years, we have reduced the number of stocks from both the overfished and overfishing categories, for a net gain of 13 stocks taken off the overfished list (20 removed, 7 added) and 14 off the overfishing list (26 removed, 12 added). In addition, 70 rebuilding programs have been developed and implemented for stocks that are overfished. More importantly, we quickly identify and respond to overfishing activities, whether caused by a change in harvesting capacity or a change in the ecosystem.

## BYCATCH

The bycatch of fishery resources, marine mammals, sea turtles, seabirds, and other living marine resources has become a central issue of concern. Over the last 27 years, NOAA Fisheries and the regional



fishery management councils have responded to this concern by taking a variety of actions to address the issue of bycatch. These actions have included research to develop better methods for monitoring and reducing bycatch, research and development into gear technologies, and various management and regulatory measures to both monitor and reduce bycatch. In March 2003, NOAA Fisheries unveiled its strategy to further reduce bycatch and achieve the national goal of minimizing bycatch and the mortality of bycatch to the extent practicable through regional approaches and implementation plans. The strategy also includes an initiative to develop new international approaches to reducing bycatch on a global scale.

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## **ESSENTIAL FISH HABITAT**

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One of the newest resource issues for inclusion in the fisheries management process is the identification of marine habitat that is essential to the health and productivity of fisheries and other living marine species. Under the SFA, EFH includes habitat in “blue water” and/or estuaries that are essential to federally managed fish. As an element of our increasing understanding of marine ecosystems, EFH has been used as a tool by the regional councils to develop ecosystem-based management measures to conserve valuable fish species and their habitats. Although the long-term task of assembling and analyzing data for numerous fishery habitats is daunting, the EFH provisions of the SFA have helped

fisheries managers focus attention on the importance of healthy habitats for thriving fish populations. Great strides have already been made in identifying important habitats and addressing those activities harmful to them. So far, the councils and NOAA Fisheries have identified and described EFH for 42 fishery management plans and nearly 1,000 species and shellfish.

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## **ROBUST FISHING IN THE U.S.**

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In the few short years since implementing the SFA, we already have begun to witness the benefits of stewardship and sustainable harvests. For example, in 2002, commercial fishermen brought 908.1 million pounds of fish and shellfish to the port of Dutch Harbor-Unalaska, Alaska – an increase of 73.6 million pounds over 2001 landings – surpassing the 32-year volume record of 848.2 million pounds held by the port in Los Angeles, California. Commercial and recreational fishing is big business in the U.S. As the world’s 5th largest fishing nation, the U.S. economy derives \$55.1 billion from fishing expenditures and revenues. The U.S. is the third largest consumer of seafood in the world, with Americans consuming 15.6 pounds per person in 2002, and importing 77 percent of our seafood fare. Also in 2002, the U.S. imported 4.4 billion pounds of edible seafood, valued at \$10.1 billion, and exported 2.4 billion pounds of edible seafood, valued at \$3.1 billion. Our total commercial landings in 2002 totaled 9.4 billion pounds, worth \$3.1 billion (ex-vessel).

Additionally, over 17 million Americans participated in recreational fishing in 2002, making over 65 million fishing trips and supporting almost 350,000 jobs with an economic impact of more than \$30 billion.

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## **MOVING FORWARD . . . TOP GOALS FOR CONTINUED PROGRESS**

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The regional councils and NOAA Fisheries have developed and implemented rebuilding plans for overfished species in our nation’s waters – per our mandate under the SFA – and we have either halted overharvesting practices or established timelines to phase out overfishing in efforts to preserve the economic viability of our coastal communities and traditional fishing villages. As fish stocks make steady progress toward recovery from decades of misuse, NOAA Fisheries and the councils continue to improve on our rebuilding strategies as our knowledge and science improves. We also are exploring more modern and cutting-edge techniques to help us in our endeavors. In addition to stabilizing all federally managed fisheries, our goals for the coming years involve exploring ecosystem-based management, increasing communication and cooperative research with industry, promoting U.S. seafood, elevating our fishery observer program, minimizing bycatch by developing new gear technology, developing pilot projects in aquaculture, improving timeliness and responsiveness in management, and exporting U.S. fishing gear technology internationally to help recover endangered species.



## STATUS OF STOCKS

In New England, fishermen and fishing communities have a long and rich history and an important role in the cultural and economic characteristics of the region. Since inception of the Magnuson-Stevens Act, the New England Council has experienced measurable and substantial success in building sustainable fisheries. Over the years, it has been committed to addressing the challenges associated with balancing resource conservation and management with social and economic concerns.

### Groundfish

Prior to 1994, New England groundfish stocks were declining precipitously. Today, NOAA Fisheries' assessments of those same stocks show that, collectively, biomass levels for 12 of the 20 stocks managed under the Council's Groundfish Plan have more than tripled. For example, witch flounder (gray sole), along with yellowtail flounder and haddock on Georges Bank are no longer overfished, and substantial rebuilding is occurring. Other stocks, including winter flounder and redfish are making a very strong comeback. American plaice, Georges Bank cod, Gulf of Maine cod, and white hake are stocks requiring further rebuilding, although all groundfish stocks have increased to a greater or lesser degree over the last decade.

### Scallops

In 1998, scallop landings totaled 12.2 million pounds. By 2001, under the Council's effective management program combined with good recruitment years, landings of sea scallops increased to 44 million pounds, while enabling the scallop biomass to increase. In 1998, scallop landings totaled 12.2 million pounds. By 2001, the Council's effective management program combined with several years of good recruitment, enabled the industry to land 44 million pounds of scallops while allowing overall biomass to increase. Today this resource is fully rebuilt.

### Monkfish

The condition of the monkfish stocks off New England and the Mid-Atlantic coast has improved significantly over the last 3-4 years under the Council's joint management program with the Mid-Atlantic Council.

### Atlantic Herring

Recent analysis of the Atlantic herring fishery indicates that fishing mortality on this species is low and current biomass is high and above Bmsy (the long-term average stock biomass level required to achieve maximum sustainable yield).

The New England Council established its Research Steering Committee (RSC) in 1999 to better integrate management efforts and research initiatives and to improve the information available for decision-making. Comprised of fishermen, scientists, managers, and members of the academic and environmental communities, the RSC serves as an advisory group to NOAA Fisheries/Northeast Region's Cooperative Research Partners Initiative. Its members bring broad-based experience to this project-based collaborative program that teams fishing, science and technology professionals from the New England region to investigate scientific questions of mutual interest.

Funds provided through Congressional appropriations to the Northeast Region have supported over 30 cooperative research projects that address a range of issues including gear selectivity and bycatch reduction studies, habitat investigations, and streamlined electronic data collection methods. Long-term programs include industry-based resource survey and study fleet initiatives, as well as tagging and stock structure work.

Additionally, the RSC also makes recommendations on sea scallop research proposals funded through a set-aside of one percent of the Total Allowable Catch of scallops harvested through special programs provided for in the Sea Scallop Fishery Management Plan. Funds generated by the sale of the set-aside scallops underwrite the costs of scallop-related collaborative research projects.



## *New England Fishery Management Council*

### **Whiting and Red Hake**

Of the five stocks of small mesh multispecies managed by the Council, two stocks of whiting (silver hake), two stocks of red hake and one stock of offshore hake, are no longer considered overfished. Furthermore, two of these stocks, including northern whiting and northern red hake, are considered rebuilt and are well above their biomass targets levels.

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### **BYCATCH**

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Bycatch in New England fisheries has been difficult to address because of the problems associated with collecting accurate data with which to evaluate and resolve potential discard problems.

Budgetary constraints have not allowed NOAA Fisheries to fully deploy observers in New England, although the agency, with the support of the Council, is committed to expanding the program. Even with these constraints, the Council has implemented a number of management measures to address discards.

For example, an eight-inch twine top requirement, implemented several years ago on all scallop dredges, has reduced the bycatch of groundfish in the scallop fishery. Similarly, the required use of the Nordmore grate in the Gulf of Maine northern shrimp fishery has significantly reduced the bycatch of juvenile groundfish. A raised footrope trawl has enabled participants in the Massachusetts whiting fishery to reduce the take of flounder as bycatch in the fishery. The Council also adopted a standard that prohibits the

operation of fishing gear in designated groundfish fishing areas unless it has been officially designated as operating with less than a 5 percent bycatch of those species. It should also be noted that trawl vessels in New England waters use the largest mesh in the world to reduce catches of juvenile fish.

The Council is also supporting research to address discards in a number of fisheries. Collaborative research projects undertaken by fishermen partnering with fisheries scientists are underway to explore conservation engineering solutions to address the bycatch of unwanted species or juvenile fish. These include experimental trials using a separator panel in trawl nets to allow the escapement of certain finfish species, cod end mesh size selectivity experiments and further investigations into gear that would reduce the likelihood of right whale entanglements in fixed gear.

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### **ESSENTIAL FISH HABITAT**

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The Council has recently developed controversial management strategies to match sustainable harvest levels with allocation of fishing days. These strategies are the most recent in a series of effort reductions that have dramatically affected the amount of fishing gear in the water and accordingly, the effects of gear on essential fish habitat (EFH). Council management actions including limits on the numbers of days available to fish, the use of closed areas, trip limits and gear restrictions have accounted for significant reductions in fishing effort since the mid-1990s.

Additionally, the Council and NOAA Fisheries prohibited “streetsweeper gear” in 1998 because of potential adverse habitat impacts. In some of the most sensitive habitats in the Gulf of Maine, the use of and roller and rockhopper gear larger than 12 inches is also prohibited.

The Council has long recognized the importance of safeguarding areas important to fish habitat through special designations. For example, three large areas that comprise roughly 30 percent of Georges Bank (6,600 square miles) are closed year-round to bottom-tending mobile fishing gear. In fact, the total square miles closed to trawl gear in New England is about the size of Massachusetts. Based on a habitat risk assessment prepared by the Council, vessels were allowed temporary access to these closed areas to harvest an abundant sea scallop resource. However, access was permitted only in the places determined to be the least sensitive to the impacts of dredge gear. In addition, nearly 1,200 square miles of the Gulf of Maine are closed to most types of bottom-tending mobile fishing gear. In addition, the near shore waters of the Gulf of Maine are closed to fishing for up to six months of the year. The Council supports research to more fully understand gear effects and the productivity of various ecosystems off the New England coast.



## Mid-Atlantic Fishery Management Council

### STATUS OF STOCKS

Over the last several decades, the Mid-Atlantic Council has made remarkable strides to conserve and protect the living marine resources in federal waters off the Mid-Atlantic coast. Working in partnership with the states and federal government, the Council has made the tough management decisions required to successfully accomplish its mission in building sustainable fisheries. Balancing the rebuilding of fish stocks with the economic and social impacts to fishermen, the Council has developed effective fishery management programs that have reversed decades of overfishing for many of the stocks in the Mid-Atlantic region. The Council has primary management authority for 12 species along the Atlantic coast and currently 10 of these species are fully rebuilt or are steadily rebuilding.

#### Surfclam/Ocean Quahog

Perhaps the most noteworthy of the fully rebuilt species are surfclams and ocean quahogs which are managed under a federal Individual Transferrable Quota (ITQ) program. Prior to management in 1976, the surfclam resource was significantly overfished. In 1990, the Council implemented an ITQ management system that reduced the number of vessels in the fishery, tripled the average harvests per vessel, eliminated derby fishing, and increased profits per participant. Today, neither the surfclam nor the ocean quahog fisheries are considered overfished.

#### Atlantic Mackerel/Squid/Butterfish

Atlantic mackerel, *Loligo* squid, *Illex* squid, and butterfish are other species that are fully recovered. During the 1960s, the distant-water foreign fleets heavily exploited these species. In 1983, the Council initiated regulation of foreign fishing by eliminating foreign vessels in U.S. waters and maximizing growth and development opportunities for American fishermen and processors. By 1993, the Council prohibited foreign vessels from participating in the Atlantic mackerel fishery. All four of the species are now fully rebuilt and Atlantic mackerel is considered “underexploited.”

#### Summer Flounder

Several other species including summer flounder, scup, black sea bass and bluefish are rebuilding. The summer flounder stock has rebounded to the point that the spawning stock biomass increased over 700 percent from 1989 to 2002. Since the Council implemented stringent management measures to regulate the commercial and recreational fisheries in 1993 (including a rebuilding schedule, commercial quotas, recreational harvest limits, size limits, gear restrictions, and permit and reporting requirements), summer flounder fishing mortality rates have dropped significantly. The summer flounder stock is no longer overfished and overfishing is no longer occurring.

#### Scup

The scup stock has also responded positively to the Council’s management measures. Both state and federal survey indices for scup indicate a significant increase in stock abundance in recent years. Current stock status indicates that the stock is no longer overfished.

#### Black Sea Bass

The black sea bass stock size has also increased to a record high level since the Council began managing the fishery in 1996. The three-year average spawning stock biomass increased by over 300 percent from 1996 to 2002. Recent survey results indicate that the stock is no longer overfished.

#### Bluefish

The Council developed management measures to regulate the bluefish fishery in 1999. An overfishing definition, a 9-year rebuilding schedule, state-by-state commercial quota system, and a recreational harvest limit were implemented. The stock responded positively to these management measures and, in fact, recent estimates of fishing mortality indicate that overfishing is no longer occurring.

#### Spiny Dogfish/Tilefish

The Council has only recently developed management programs for two other stocks – spiny dogfish and tilefish. These plans have implemented aggressive management measures to rebuild both of these stocks including quotas and permit requirements.





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## BYCATCH

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In the Mid-Atlantic region, limited sea sampling data and data from vessel trip reports (VTR) are available to characterize the bycatch in commercial fisheries.

However, the nature of the data make it difficult to develop any definitive or reliable conclusions about bycatch for these fisheries especially during the periods or in areas where sea sampling has not occurred or VTR data are limited or contradictory. The lack of discard data has hampered the ability of the Council to respond to potential discard problems in the commercial fisheries. In fact, the lack of data has been the primary reason why an age-based assessment cannot be developed for either scup or black sea bass. The Council recognizes the need for improved estimates of discards for all of the fisheries that are managed by the Council. As such, the Council has requested an increase in at-sea sampling intensity over a broader temporal and geographical scope than is currently available. The collection of additional data by NOAA Fisheries will allow the Council to more effectively respond to discard problems by changes in mesh, threshold and minimum size regulations or by implementing season and area closures in response to changes in fishermen behavior or an increased level of discards.

When discard information is available, the Council implements changes in commercial and recreational management measures in response to changes in fishermen behavior or an increased level of discards. Currently, the Council has

implemented gear-restricted areas through its annual specification process to minimize scup discards in the small mesh fisheries. The Council has also funded research to identify gear modifications that reduce the bycatch in small mesh fisheries. In 2003, a program was implemented to allow the use of this modified gear in the gear-restricted areas. In addition, the framework adjustment procedure in the Council's Fishery Management Plan (FMP) can be used to respond quickly to changes in fisheries through the implementation of new management measures or the modification of existing measures.

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## ESSENTIAL FISH HABITAT

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The Council addressed the essential fish habitat (EFH) provisions of the Sustainable Fisheries Act (SFA) in amendments to four existing FMPs. These amendments were submitted to NOAA Fisheries in October 1998 and were partially approved in 1999. Additionally, the Council addressed the EFH provisions of

the SFA in the original Dogfish and Tilefish plans that were approved in 2000 and 2001, respectively.

The majority of the stocks managed by the Council has experienced and/or will continue to experience declines in fishing mortality while being managed under rebuilding plans. Overall reductions in fishing mortality and fishing effort have had a positive impact on stock status and also have acted to protect EFH. Reductions in fishing mortality result in decreases in fishing effort. This translates in an overall reduction of fishing gear impacts on EFH. In addition to reductions in fishing mortality, the Council has implemented regulations that have indirectly acted to reduce fishing gear impacts on EFH. Such regulations include restrictive harvest limits, gear restricted areas for small-mesh fisheries, the ability to establish special management zones, and restrictions on roller rig gear. These measures have acted to improve the status of the stocks while conserving marine habitat.

In consultation with the NOAA Fisheries and the Atlantic States Marine Fisheries Commission, the Council designed a research program that integrates fishing industry activities with cooperating scientific partners to improve fishery management decisions. Beginning in 2001, this program, known as the Research Set-Aside (RSA) Program, established a set-aside quota which is removed from the annual total allowable landing levels recommended by the Council for a number of species. This set-aside amount is then available as an award to applicants who successfully compete in the Council's RSA program. Research to date has included studies that evaluate the effectiveness of escape vents in black sea bass traps, test the effectiveness of escapement panels to reduce bycatch of scup in squid nets, involve the development of a supplemental finfish survey, and investigate the effects of increasing mesh size in the summer flounder fishery.



## STATUS OF STOCKS

To “Conserve and Manage” has been the South Atlantic Council’s mission and focus for marine resources found offshore along the South Atlantic coast for the past quarter century. From North Carolina’s Outer Banks to the Florida Keys, species as diverse as tropical corals to king mackerel are part of the Council’s nine management plans for marine resources under its jurisdiction. The Council has worked diligently to develop and maintain sustainable fisheries as demands have expanded from the ever-increasing number of people along the southeastern coast while balancing the allocation of resources, social and economic impacts of management decisions, protection of essential fish habitat, and federal mandates. With public awareness, input, and cooperation from state and federal partners, the Council continues to develop innovative, effective, long-term management strategies for the future.

The 2002 Report to Congress shows that management measures that have been implemented are working. Overfishing has declined and fewer stocks are overfished. The number of species classified as “unknown” in the report also decreased in regards to their overfished status as additional information has become available. Seven of the nine fisheries managed by the Council continue to be maintained at sustainable levels and the two fisheries where overfished species occur (snapper/grouper complex and red drum)

are being rebuilt to sustainable levels under current and proposed management.

Harvest of red drum from the EEZ was prohibited in 1990 and both the recreational and commercial snapper/grouper fisheries are highly regulated. Progress is being made as more species are removed from the overfished list each year. Management measures in place for the other seven fisheries will ensure that the current productive sustainable levels are maintained into the future.

### Snapper/Grouper Complex

In 1983, the fishery management plan (FMP) for the snapper/grouper species complex was first implemented. Due to its mixed species nature, this fishery has become the greatest management challenge for the Council. Initially, regulations consisted of minimum sizes, gear restrictions and a provision for the designation of special management zones (SMZs). Early attempts to develop more effective management measures were thwarted by lack of data for the resource and the fishery. The condition of many of the species within the snapper/grouper complex remains unknown. Improved data collection (in terms of quantity and quality) during the 1980s and 1990s has provided more information on some of the more commercially and recreationally valuable species. One species within the snapper/grouper complex, wreckfish, is managed separately under an Individual Transferrable Quota (ITQ) program developed cooperatively with industry. For

other overfished species in the complex, strict management measures, including prohibition of harvest in some cases, have been implemented. The Council is also considering the use of marine protected areas as a management tool for snapper/grouper species.

### Dolphin/Wahoo

Adopting a precautionary and risk-averse approach to management, the Council in cooperation with the Mid-Atlantic and New England Councils have developed a Dolphin Wahoo FMP for the Atlantic. Recognizing the significant importance of the dolphin/wahoo fishery to the recreational fishing community in the Atlantic, the goal of the plan is to maintain the status quo relative to resource allocation while maintaining current harvest levels of dolphin.

## BYCATCH

The South Atlantic Council has adopted a number of management measures to reduce bycatch in regulated fisheries. The most notable example is the requirement that bycatch reduction devices (BRDs) be used in all penaeid shrimp trawls.

In the snapper/grouper fishery, measures to reduce bycatch include a prohibition on the use of trawls, fish traps, and entanglement nets to harvest snapper/grouper species. In addition, the use of bottom longline gear is limited to depths of 50 fathoms or more and the gear is prohibited south of St. Lucie Inlet, Florida.



## South-Atlantic Fishery Management Council

Gear restrictions have also been implemented for coastal migratory pelagic fisheries, including king and Spanish mackerel to reduce discards. The Council has prohibited the use of drift gillnets and minimum mesh sizes are required for gillnets allowed in the Spanish mackerel fishery.

In the deepwater golden crab and spiny lobster fisheries, gear specifications for traps require escape gaps and degradable panels to minimize waste and bycatch.

### ESSENTIAL FISH HABITAT

Throughout the years, the Council has made the protection of fisheries habitat a priority and has met all of the requirements regarding essential fish habitat (EFH) as directed under the Magnuson-Stevens Act (MSA). This has been accomplished through regulation of fisheries to protect habitat from the direct or indirect impacts of fishing. Through the Coral FMP the Council has protected coral, coral reefs, and live/hard bottom habitat in the South Atlantic region by prohibiting all harvest or possession of these resources which serve as EFH to many managed species. Another measure implemented through the Coral FMP was the designation of the Oculina Bank Habitat Area of Particular Concern, a unique and fragile deepwater coral habitat off southeast Florida that is protected from all bottom tending fishing gear.

The Council has prohibited the use of fishing gear that would damage EFH such

as bottom tending (roller-rig) trawls on live bottom habitat. Also, trawling for rock shrimp in designated areas around the Oculina Bank is prohibited and vessel monitoring systems (VMS) are required to help enforce the prohibition. Recently, the Council's Sargassum FMP was approved providing protection for the most valuable pelagic habitat occurring in the South Atlantic.

In addition to implementing regulations to protect habitat from fishing related degradation, the Council actively comments on non-fishing projects or policies that may impact fish habitat. The Council adopted a habitat policy and procedure document that established a four state Habitat Advisory Panel and a Council comment and policy development process. Working with this panel, the Council has developed and approved policies on oil and

gas exploration, development and transportation, dredging and dredge material disposal, submerged aquatic vegetation, and ocean dumping. These policies provide guidance for agencies commenting on projects impacting EFH in the South Atlantic.

In 1998, the Council developed the Habitat Plan for the South Atlantic region. This document was prepared through a cooperative effort of state, federal and regional habitat partners on the Habitat and Coral Advisory Panels. This plan will serve as a cornerstone for the Council to move forward and develop an ecosystem-based approach to resource management. Gathering input from its advisory panels, technical workshops and partners, the Council is utilizing this innovative approach to address the future of marine resources in the South Atlantic region.

The management of coastal migratory pelagics, including king mackerel and Spanish mackerel is an excellent example of the effectiveness of proper management. Prior to the 1980s, mackerel catches were essentially unregulated. Introduction of airplane reconnaissance and large power-assisted gillnet vessels in the commercial fishery took advantage of the schooling nature of the fish and greatly increased catches. Harvests by both recreational and commercial fishermen in the 1980s and early 1980s led to overfishing. Federal regulations were implemented in 1983 to control harvest and rebuild dwindling stocks of king and Spanish mackerel. Different migratory groups were later managed separately, and quotas, bag limits and trip limits established to rebuild the mackerel fisheries. Gear regulations included the elimination of drift gillnets in 1990. Management measures developed by the South Atlantic Council for the Atlantic migratory groups of king and Spanish mackerel have been very successful in rebuilding stocks, and the mackerel fishery remains sustainable and economically viable for both recreational and commercial fishermen.



# Gulf Fishery Management Council



## STATUS OF STOCKS

Since 1976, the Gulf Council has developed or assisted in the development of 11 fishery management plans (FMP). However, three of these are now under NOAA Fisheries jurisdiction including billfish, swordfish, and sharks. In 1980, NOAA Fisheries disapproved the Council's Gulf shark plan and, subsequently, prepared a shark FMP for the entire east coast. In 1981, the Council elected not to proceed with implementation of the groundfish FMP until a shrimp trawl was developed to reduce the bycatch of finfish by 50 percent. In the early 1990s, NOAA Fisheries developed the trawl device which is now required on all shrimp vessels.

### Shrimp

The Gulf of Mexico penaeid shrimp fishery is one of the nation's largest and most valuable fisheries. The three species of penaeid shrimp (pink, white and brown) comprise more than 99 percent of the landings for shrimp species managed by the Council. In recent years, landings have averaged 150 million pounds with an estimated annual dockside value of \$500 million. These species have not been considered overfished in the past 30 years that NOAA Fisheries has monitored the parent stock levels. Annual levels are managed by maintaining the parent stock number above minimum levels that provide for adequate recruitment for the next year's harvest. Over the course of this monitoring period, parent stock numbers have remained above those needed to produce the maximum sustainable yield (MSY).

Through cooperative efforts between NOAA Fisheries, state agencies, and the Council, closed areas and closed seasons have been imposed to maximize the harvest.

### Stone Crab Fishery

Stone Crabs are not overfished and annually produce about 3.0 to 3.5 million pounds of claws.

### Spiny Lobster

Spiny lobster is not overfished; however, annual production was reduced as a result of the practice of utilizing live, undersized lobster as attractants in traps targeting other species. In recent years, mortality associated with the practice has been significantly reduced. The current annual commercial production of lobster is about 6 million pounds while the recreational harvest is approximately 1 million lobster.

### Finfish

Six stocks under the Council's jurisdiction are considered overfished including two minor stocks, Goliath grouper and Nassau grouper. The Council has acted proactively to protect these two stocks by prohibiting the harvest or possession of these species beginning in 1990 and 1995, respectively. Rebuilding plans have been or will be developed and submitted to NOAA Fisheries for implementation for the six overfished stocks including red drum, red snapper and greater amberjack. A recent stock assessment indicates that red grouper are no longer overfished. Overfishing is occurring in four major stocks of finfish including red drum, red snapper, vermilion snapper and red grouper.

### King and Spanish Mackerel

The Gulf-group king and Spanish mackerels are examples of successful recreational rebuilding programs implemented under the Magnuson-Stevens Act. When the FMP for coastal migratory pelagics was implemented in 1983, both mackerel stocks were considered as single stocks ranging from Mexico through Mid-Atlantic and New England areas. When management information became available in 1985, it indicated there were separate migratory groups of the mackerels for Atlantic and Gulf of Mexico areas with mixing zones off southeast Florida. In subsequent annual action, the Council reduced the total allowable catch (TAC) for Gulf-group king mackerel and also required closures of the recreational and commercial fisheries when their respective quota was reached. Similar reductions were applied to Gulf-group Spanish mackerel. Over the ensuing years, the TACs were gradually raised and the Spanish mackerel stock was considered rebuilt to MSY level by 1994 and the king mackerel stock was nearly rebuilt in 2003. These extended rebuilding periods were structured to minimize adverse economic affects on recreational and commercial industries and fishing communities.

### Grouper

Gag, the major grouper species, was classified as undergoing overfishing in 1999. In 2000, the Council implemented rules that arrested overfishing of the stock which is important to the recreational sector. During 2001 and 2002, the Council developed an extensive rebuilding plan for



red grouper, which was classified as both overfished and undergoing overfishing, based on a 1999 stock assessment. This rebuilding plan required about a 45 percent reduction in landings and included a proposed action to prohibit longline vessels from fishing inshore of 50 fathoms. A 2002 stock assessment indicated a significant improvement in the status of the red grouper stock, i.e., no longer overfished.

### **Amberjack**

Due to the concern over the status of the greater amberjack stock, the Council took precautionary action to reduce landings by reducing the recreational bag limit to one fish in 1997, and prohibiting commercial landings for a 3-month period each year beginning in 1998. Amendment 2 to the FMP submitted to NOAA Fisheries in 2002, proposes to rebuild that overfished stock within 7 years.

### **BYCATCH**

The Council has developed a number of management measures to reduce bycatch for several fisheries that use traps. For example, traps used in the spiny lobster, stone crab, and reef fish fisheries are required to have escape gaps and degradable panels or door hinges. Fish traps must be returned to shore on the completion of each fishing trip. A recent study of the contents of 21,000 spiny lobster traps indicated that a very low level of non-targeted species were caught. The sidebar contains a discussion of progress on shrimp trawl bycatch reduction.

### **ESSENTIAL FISH HABITAT**

Since 1979, under the establishment of a Habitat Protection Committee, the Council has been continuously involved in the processes of protecting, restoring, creating, and improving essential fish habitat (EFH). In carrying out this responsibility, the Council established three regional Habitat Protection Advisory Panels for the Texas, Mississippi/Louisiana and Florida/Alabama areas. These panels, represented by federal, state and user group members, assist the Council in carrying out its habitat protection policies.

In 1998, the Council submitted a Generic EFH Amendment that identified and described EFH for principal stocks being managed by all the FMPs. The Council is now developing a detailed Environmental Impact Statement (EIS) for the Generic EFH Amendment. Because of the complexity of the northern Gulf ecosystem and the range of the Gulf region (i.e., 1,600 miles of coastline), the description of the affected environment is extensive. This EIS, when completed in 2004, will more closely define EFH for each species by life stage and identify habitat areas of particular concern (HAPC) as well as gear impacts on the environment.

In the process of protecting habitat and critical life stages of a number of stocks, the Council has established 135,000 square nautical miles of marine protected areas. These range from areas where certain fishery gear such as trawls or longlines are prohibited, to nursery grounds for juveniles, HAPCs, and marine reserves where all fishing is prohibited.

Significant reductions in bycatch have occurred in the Gulf of Mexico shrimp trawl fishery since mid-1970s. During that period, NOAA Fisheries estimated that the trawl fleet was discarding about 300,000 metric tons of finfish and invertebrate bycatch — a ratio of bycatch to shrimp poundage of about 10:1. By 1995, NOAA Fisheries estimated the average ratio of bycatch to shrimp was reduced to about 4:1. Credit goes, in part, to industry efforts to modify gear and a requirement that all shrimp vessels use trawls equipped with turtle exclusion devices (TEDs).

A rebuilding plan for red snapper required further reductions in trawl bycatch. Beginning in 1998, the Gulf Council, through Shrimp Amendment 9, required the use of bycatch reduction devices (BRDs) in trawls used in the central and western Gulf to achieve at least a 44% reduction in fishing mortality of juvenile red snapper. In 2002, the Council took action through Shrimp Amendment 10 to extend the BRD requirement to the eastern Gulf. Currently, BRD designs are estimated to reduce the bycatch of juvenile snapper by at least 50 percent, while the bycatch of other finfish species such as croaker and spot has been reduced by more than half from previous levels.



## STATUS OF STOCKS

In the U.S. Caribbean, one of the most successful bases for the development of fishery management plans (FMP) has been the information brought forth by the commercial fishermen with an interest in maintaining healthy fisheries. The FMP for Spiny Lobster was established in 1981, followed by the Shallow Water Reef Fish FMP in 1985. The complexity of the reef fish fisheries with a very high diversity of fish species being landed in every trip has been a major challenge for scientists and managers.

The Council manages queen conch (*Strombus gigas*) within the fishery management unit (FMU) of 13 other species of mollusks; spiny lobster (*Panulirus argus*) with three other species of lobster in the FMU; corals; and reef fish. There are 37 fish families in the reef fish FMU along with over 140 species of the most commonly landed fish species. The Council established in 1999 the first no-take marine reserve in federal waters, the Marine Conservation District (MCD) off St. Thomas, U.S. Virgin Islands (USVI). The MCD was established under the Coral FMP, to protect unique coral areas, but also affords protection to all fish and invertebrate species from harvest.

### Queen Conch

The Council had proposed the closure of the fishery prior to disapproval of the amendment to the FMPs submitted to comply with the Sustainable Fisheries Act (SFA) requirements. On hold since 2002,

the efforts to rebuild the fishery include developing a Geographical Information System (GIS) for queen conch, based on the information provided by the queen conch commercial fishermen. The GIS has been developed by the Department of Geography of the University of Puerto Rico using data from the SEAMAP-Caribbean fishery independent NOAA fisheries program, which is run through the Puerto Rico Department of Natural and Environmental Resources and the Department of Planning and Natural Resources of the USVI. This information has been cross referenced to the habitat maps developed by NOAA Fisheries. This work is being done to identify potential protected areas as nursery grounds for queen conch.

At present there are size limits in place, as well as seasonal closures to protect egg-laying conch in both state and federal waters. Additional work on potential nursing areas includes the no-take marine reserve of Culebra, Puerto Rico that has been assessed for queen conch and reef fish. These baseline data collections will serve to monitor changes in fish populations as compared to open fishing areas.

International efforts have been pioneered by the Council to establish compatible management strategies in the region. The International Queen Conch Initiative was developed in 1996, and continues to promote pan-Caribbean management and monitoring of queen conch.

### Spiny Lobster

The spiny lobster fishery has been under management since 1981, with compatible regulations of size limits and the banning of taking egg-bearing females throughout the state and federal jurisdictions. The percent of undersized spiny lobsters taken commercially has continuously declined to less than 20 percent. The spiny lobster fishery is currently under assessment.

### Reef Fish

The grouper and snapper fisheries are the most important fisheries in the U.S. Caribbean. These species are most vulnerable during their spawning aggregations, which are very site and time specific; they occur every year during the same months, moons and at the same sites. These aggregations are easy targets for commercial and recreational fishermen. The Council has used seasonal area closures to protect these species and have found this management strategy to be the most effective. These have been developed in cooperation with the local fishermen and governments.

The Council has also prohibited the take of two groupers from the exclusive economic zone (EEZ), the Nassau grouper and the goliath grouper, in hopes of rebuilding their populations.

### Coral

The Council prohibited the take of all coral, dead or alive, and live-rock since 1995. Fisheries in the Caribbean are coral reef based fisheries, both in shallow and deep waters. The corals were protected



## Caribbean Fishery Management Council

because of their important role in the sustainability of commercial and recreational fisheries. The increased harvest of reef fish organisms throughout the world—for the aquarium trade—was a primary concern to the Council. The area is known for a high diversity of fish and invertebrate species highly sought by aquarists. The Council had already protected butterfly fish and seahorse from harvest by prohibiting their take from the EEZ. In addition, juveniles of red hind (small grouper of commercial importance) and mutton snapper were also protected from the trade by prohibiting their harvest for this purpose.

The Council is currently involved in the mapping and assessment of coral reefs in the EEZ. These deep water reef-forming corals have not been described in any detail, but some areas show very healthy corals and depths of over 180 feet. A GIS will be prepared from the historical information on deepwater coral reefs.

### BYCATCH

Because of the artisanal matters of the U.S. Caribbean fisheries, most of the fish captured are landed and sold, or kept for personal use. However, the Council will be seeking the establishment of a program to achieve standardization of bycatch reporting of the commercial fisheries included in the Council FMPs. The Council will be cooperating with local agencies to estimate bycatch especially when commercial fishermen will be involved in these efforts.

### ESSENTIAL FISH HABITAT

The Council, in collaboration with the Woods Hole Oceanographic Institute, the University of Puerto Rico, and other local and federal agencies, has begun to identify species composition of the deepwater reef-forming corals in the EEZ using high-resolution digital photos, which allows for identification of the deepwater reefs.

The preliminary results show an incredible diversity of species in healthy coral reef communities that are worth preserving for future generations.

The Council has also contracted to map and obtain high-resolution bathymetry through side scan sonar and multi-beam of the MCD not-take zone, established in 1999, off St. Thomas, USVI, and the deepwater seasonally closed areas of St. Croix, USVI. These areas are fish spawning aggregation sites for groupers, snappers, and other fish species. Mapping of these deepwater habitats in the EEZ is a high priority in the efforts of the Council to identify and describe essential fish habitat. In addition, the Council will be funding a new project on coral reefs. This will produce an inventory and atlas of corals and coral reefs, with emphasis on deepwater coral reefs within the U.S. Caribbean EEZ. This project was approved as part of the NOAA Coral Reef Program, which funded the Councils that have coral and coral reefs under their area of authority.

The most successful achievement of the Council in the international arena has been the coordination of the International Queen Conch Initiative (IQCI). Since early 1990, the Council has worked with other countries in establishing common fishery management goals and objectives to administer the region's marine fishery resources. The culmination of this work has been the adoption, in 1996, of the Declaration of San Juan, which established the IQCI.

This initiative, coordinated by the Council, and with the participation of the U.S. Department of State and the NOAA Fisheries, has proven to be an invaluable mechanism for the Caribbean countries to exchange information, and to provide capacity building to countries in need of developing better management strategies.



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## STATUS OF STOCKS

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The Pacific Council has fishery management plans (FMP) for salmon, groundfish, and coastal pelagic species (including sardines, mackerels, anchovies, and squid), and has proposed a management plan for highly migratory species (including certain tunas, billfish, and sharks) in the 200-mile zone off the coasts of Washington, Oregon, and California. The Council also works with the International Pacific Halibut Commission to manage halibut fisheries. Altogether, the Council manages over 100 species of marine fish.

### Salmon

Salmon fisheries, once the mainstay of many small west coast communities, have fluctuated significantly during the last quarter century. Since 1989, sixteen salmon stocks have been listed as threatened or endangered under the Endangered Species Act (ESA). Recent improvements in ocean conditions, an improved record in achieving spawning escapement goals, and freshwater habitat restoration efforts have resulted in record or near-record returns for many salmon stocks, including stocks listed under the ESA. In 2003, the Council set seasons that provided the largest number of angler trips since 1991 and the second highest commercial value since 1989.

### Groundfish

The Council manages over 80 species of Pacific coast groundfish. Trip limits were enacted for the first time in 1983, and the

first control date for a groundfish limited entry fishery was enacted in 1988. In 1994, a limited entry system was enacted in order to reduce capacity in the fishery.

The groundfish fishery has been significantly reduced in the past decade. The Secretary of Commerce declared a groundfish disaster in 2000. In 2002, the Council was presented with revised science that showed that three species designated as overfished—yelloweye, bocaccio and canary rockfish—were reproducing more slowly than previously thought. The next month, the Council adopted expansive continental shelf closures to protect these species. These restrictions went into effect in summer 2002 and continue, with some modifications, today.

### Coastal Pelagic Species

The coastal pelagic species (CPS) fishery (sardines, anchovies, mackerel, and market squid) are generally viewed as healthy and well-managed. The Council created an ecosystem-based harvest control rule for sardine that recognizes the close relationship of sardine abundance to oceanic and climate variability and the value of sardines as forage for other fish, sea birds, and marine mammals. No coastal pelagic species are overfished and the fishery is stable.

### Highly Migratory Species

The Council is also moving towards precautionary and proactive management of the West Coast highly migratory species (HMS) fishery, which includes tunas and sharks. These stocks are considered healthy. An FMP for these species has been

adopted and NOAA Fisheries will consider approval and disapproval options in the near future. The Council included conservative harvest guidelines for two slowly-reproducing shark species in the proposed FMP.

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## BYCATCH

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Bycatch cannot be totally avoided in any high volume fishery, but on the West Coast, bycatch in the groundfish fishery is the primary concern. Bycatch in salmon fisheries is substantially less of a problem, and bycatch in the CPS fisheries is negligible. Bycatch in HMS fisheries is different in that it involves species other than fish.

The Council has put in place a number of measures to ensure that bycatch is minimized in the groundfish fishery. Some measures are focused on assessing the problem - for example, a new observer program was implemented in 2001, and a new trawl bycatch model has been developed. Other measures focus on management actions to reduce bycatch, such as restrictions on footropes and gear, closure of areas where high levels of bycatch occur (such as the Rockfish Conservation Areas and the Cowcod Conservation Areas), non-retention regulations, and reduction of trip limits for co-occurring species. In 2003, in addition to bimonthly limits, the Council put into place highly restrictive depth-based fishery closures to reduce bycatch of overfished species.

For its salmon fisheries, the Council uses predictive methods to determine





# Pacific Fishery Management Council

fishing areas and seasons that reduce impacts on weak stocks while allowing harvest of abundant stocks. Additionally, selective fishing techniques, such as fishing deeper in the water column to avoid coho, have helped reduce bycatch in the recreational and commercial salmon fisheries.

Bycatch concerns in CPS fisheries are minimal. Because of their schooling behavior and the nature of the gear used in the fishery, CPS are fairly easy to target with minimal catch of non-target species.

Highly Migratory species fisheries include the controversial drift gillnet and longline fisheries. Unlike the other three FMP fisheries, bycatch in these fisheries involve seabirds, marine mammals, and sea turtles. NOAA Fisheries is now collecting information about the impacts of this longline fishery on protected resources.

## ESSENTIAL FISH HABITAT

In response to the Magnuson-Stevens Act, the Council has developed documents that describe EFH for coastal pelagic species and groundfish (1998), salmon (1999), and highly migratory species (2002). NOAA Fisheries has approved all but the highly migratory species descriptions, which are part of a new fishery management plan that is awaiting submission to NOAA Fisheries for review.

In 2000, the Council's EFH designation for groundfish was challenged in court. As settlement, the Council and NOAA Fisheries are now developing a supplemental environmental impact statement for groundfish EFH. This

document will analyze alternatives for designating EFH and minimizing the adverse effects of fishing on EFH.

Several Council measures, such as reducing trawling in rockfish habitat and placing restrictions on trawl footrope size, were intended primarily to protect overfished species, but have a direct impact on protecting habitat. These measures include large de facto marine reserves that were specifically designed to protect overfished rockfish species. Examples include the 4,300-square mile cowcod

conservation areas off California, where all bottom fishing is prohibited; the large depth-based rockfish conservation areas along the continental shelf (seasonally ranging from 13,518 to 19,796 square miles) closed to trawling, and the 36,000 square miles closed to non-trawl fisheries. The Council is also working closely with National Marine Sanctuaries in California in considering marine reserves in federal waters of the Channel Islands National Marine Sanctuary and, potentially, other California sanctuaries.

The resurgence of Oregon Coast Natural (OCN) coho salmon is one of the most dramatic examples of a fishery management success on the West Coast. An innovative management strategy allowed the stock to recover from past overharvest, habitat damage and a period of extremely poor ocean survival to levels not seen in over 25 years, helping to restore viable and popular fisheries.

By the early 1990s, OCN coho were severely depressed despite several attempts to rebuild the stock. In response, the Pacific Council created Amendment 13, which based management of OCN coho on exploitation rates rather than spawner escapement objectives. In addition, the amendment allowed access to abundant hatchery coho stocks without increasing impacts on OCN coho through a region-wide effort to mark nearly all hatchery-produced coho.

During the first few years of selective fisheries, the new management system allowed fisheries targeting other stocks to continue because over 85% of all OCN adult coho escaped to spawn each year. In the last three years an average of over 140,000 angler trips per year have been supported by selective coho ocean fisheries, generating over \$7.5 million in annual coastal community income, or about 25% of that generated by the entire West Coast ocean recreational salmon fishery. Without selective fishery opportunity and a management framework to allow access to abundant hatchery stocks, very little of this economic opportunity would have been realized. The management system has also allowed for a substantial increase in OCN coho abundance. In 2002, OCN ocean abundance was the highest since 1976, and spawning escapement was more than double any year since 1970, when accurate records were first kept.



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## STATUS OF STOCKS

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The Western Pacific Council's jurisdiction extends from Hawaii west across the International Date Line to the Marianas Islands and south of the equator to American Samoa. Other islands and atolls are included within this triangular shaped area. Federal waters surrounding the islands total more than 1.5 million square nautical miles, almost half of all EEZ waters within U.S. jurisdiction. The region includes the state of Hawaii, the territories of American Samoa and Guam, the Commonwealth of the Northern Mariana Islands, and Pacific Remote Island Areas.

Fishing is important to cultural tradition, economy and lifestyle for the people of the Western Pacific. Fish are in demand as a centerpiece meal for many feasts and holiday celebrations. Seafarers who settled Samoa, Hawaii and the Marianas depended on fish for protein. They devised social and cultural controls to sustain seafood sources for centuries prior to the implementation of marine resource management. The region's dependence on fish motivates a concern for keeping bycatch levels as low as possible. Wasting sea resources is considered a cultural taboo as well as a bad fishing practice.

### Coral Reefs

Approximately 70 percent of the world's coral reefs and 94 percent of those within U.S. jurisdiction are found in the Pacific. The region is home to a wide range of species because of its warm, tropical waters. Its reefs support nearly 900 fish species in American Samoa, 800 in the

Marianas and more than 500 in Hawaii. A Coral Reef Ecosystems Fishery Management Plan (FMP), the first of its kind in the U.S., helps manage this diverse resource.

### Armorhead

Armorhead is the only species classified as overfished under the Council's management. The species aggregates along the Emperor Seamount chain north of the federal waters around Hawaii, mostly in international waters. The fishery collapsed in the late 1960s due to the Japanese and Russian fleets use of trawl and bottom longline gear. The Council responded by developing a Bottomfish FMP in 1986 that implemented a moratorium on harvest within the EEZ.

### Tuna

The tuna fishery of the Western and Central Pacific is the largest in the world. Valued at \$2 billion per year, it accounts for about two-thirds of the global tuna catch. Of the 29 million pounds of commercial landings in the Western Pacific region in 2001, 21 million pounds were tuna. No tuna stock has been determined to be overfished, but some are at or approaching MSY.

### Highly Migratory

The Council assisted the U.S. government in four of the seven sessions leading to the adoption of the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. The Convention is responsible for managing the highly

migratory fish stocks in national waters and high seas within an area that includes Hawaii, Japan, eastern Australia and Pitcairn Island at its corners.

### Bottomfish

Bottomfish are tied to benthic habitat and subject to localized depletion in populous areas such as Hawaii. The Council is reassessing the Hawaiian archipelagic-wide bottomfish stocks in light of the revised overfishing definitions. The Northwestern Hawaiian Islands bottomfish resources remain healthy. Although the archipelagic stocks may not be classified as "overfished," the Council may need to address localized "overfishing" in the main Hawaiian islands.

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## BYCATCH

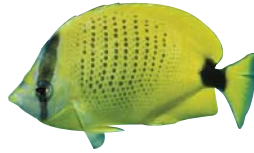
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Bycatch levels of fish in the region are low. In 1987, the Council was the first to ban the use of drift gillnets inside the EEZ. Today, variations of hook and line gear are the primary gears used to harvest fish in the Western Pacific. Bycatch is low because everything from the sea is eaten and very few species and sizes are discarded.

In addition, the Council has adopted a number of management measures to minimize the bycatch of protected species. Area closures, gear modifications, and other measures have been employed to reduce hooking or entangling protected species, and increase the likelihood of their survival after release. In 1990, the Council developed a longline closure of 50 nautical miles around the Northwestern Hawaiian Islands to protect the Hawaiian Monk Seal.



## Western Pacific Fishery Management Council



A number of measures adopted by the Council safeguard seabirds in the Hawaii longline fishery. Such measures include requirements for fishermen to use a line shooter to set gear so it sinks more rapidly; attach weights to branch line so birds cannot catch the rapidly sinking bait; thaw all bait and dye it blue so it sinks faster with birds less likely to see it; and strategically throw out fish or fish parts while setting or hauling to distract the birds from baited hooks.

In order to protect sea turtles, longline fishermen must carry and use dip nets, line clippers, and wire or bolt cutters to bring the sea turtles safely on board. The Council intends to implement measures to minimize the catch of sea turtles in shallow set swordfish fishing. These include the mandatory use of circle hooks and mackerel bait which have been shown in the Atlantic to be highly effective in reducing interactions with loggerhead and leatherback sea turtles. Further, the Council will likely maintain constraints on swordfish fishing in terms of fishing effort and/or sea turtle interactions which will act as triggers to curtail swordfish longlining in a given year. In the future, the Council is looking to foster sea turtle recovery efforts by supporting international meetings, promoting habitat conservation and management programs at nesting beaches and coastal foraging grounds, and increasing community education and awareness to reduce threats to sea turtle stocks.

The Council also provided financial support for the testing of an underwater setting chute and side-setting in waters

north of Hawaii. Side-setting virtually eliminates the incidental catches of seabirds. The chute sets baited hooks underwater, out of sight and reach of diving seabirds. This is important in Hawaii longline fishing, especially north of 23 degrees latitude where seabirds are abundant.

### ESSENTIAL FISH HABITAT

Habitats associated with coral reefs and the deep blue sea define the Western Pacific Region. To protect these habitats, the Council developed FMPs in the 1970s and 1980s to prohibit destructive fishing practices. As a result, the fisheries in this region now use mainly hook and line and passive gear such as lobster traps that do not adversely affect these areas.

The Council adopted a precautionary approach to essential fish habitat (EFH) designation in its five FMPs. The Coral Reef Ecosystem FMP designates all waters and habitat at depths from the sea surface to 50 fathoms extending from the shoreline to the outer boundary of federal waters. This broad EFH designation ensures sufficient protection to sustain managed species. The Bottomfish plan defines EFH and designates all escarpments/slopes between 40 to 280 meters and three known areas of juvenile opakapaka habitat as habitat areas of particular concern (HAPC). The Crustaceans plan designated waters from up to 200 meters deep as EFH, and banks in the Northwestern Hawaiian Islands with summits lower than 30 meters as HAPC because they support successful recruitment of juvenile spiny

lobster. The Precious Corals plan designates the established bed of Makapu'u and Au'au Channel as HAPCs because of its ecological value, the rarity of the life there and sensitivity to human intrusion. The EFH for pelagic management unit species occurs outside of EEZ waters. The Council participates in international forums to protect the habitat for these species.

The diverse marine and human factors of the western Pacific require more than a top-down, one-size-fits-all approach to managing those resources. The Council emphasizes the human dimension of ecosystems through grassroots decision-making based on traditional experiences of those who have been a part of the region for centuries. The Council recently completed a plan to manage coral reef ecosystems that is the nation's first explicitly based on ecosystem management principles. Without formal precedents for such a plan, the Council found guidance in the ecological principles and knowledge of its Pacific ancestors. This history of locally-based consultation has influenced the Council's contributions to world initiatives for migratory pelagic species, including tuna, seabirds and sea turtles. By including a wider array of Pacific Rim stakeholders, the Council is pursuing a 21<sup>st</sup> century mission to expand cooperation among fishermen, managers and scientists throughout the Pacific.



## STATUS OF STOCKS

In the North Pacific, a rigorous process in place for over 25 years ensures that annual catch quotas are set at conservative, sustainable levels. Based on independent groundfish survey data and fishery catch data, combined with sophisticated models to estimate stock abundance and appropriate harvest rates, scientists from NOAA Fisheries recommend acceptable biological catch (ABC) levels for each groundfish stock. Each fall, these are reviewed by the Council's Groundfish Plan Teams and further reviewed by the Council's Scientific and Statistical Committee, prior to the Council's setting of the total allowable catch (TAC) levels for the upcoming fishing year. The TAC is always set below the ABC level, and far below the overfishing level for each stock. In the Bering Sea and Aleutian Islands area, an additional precautionary principle is applied, so that the annual TAC for all stocks combined cannot exceed 2 million metric tons, regardless of the combined ABC levels. Catch is monitored through a comprehensive in-season reporting system, supplemented by a groundfish observer program that deploys more than 35,000 observer days annually in these fisheries.

### Groundfish

Over the past 25 years, groundfish harvests have been sustained in the range of 3 to 5 billion pounds annually, and no groundfish stocks are considered overfished. The North Pacific Council recently commissioned an independent review of

groundfish exploitation strategies and, based on recommendations from that review, will be considering possible changes to basic exploitation strategies. Such changes will be aimed at taking a more ecosystem-oriented approach, as well as adjusting specific approaches for certain long-lived species such as rockfish, to ensure continued sustainability of Alaska groundfish fisheries.

### Crab

Crab stocks have undergone large fluctuations in biomass. Two crab stocks (Pribilof Islands and Bristol Bay red king crab stocks) are well above the stock size which produces maximum sustainable yield. Other crab stocks are at average to low levels, and aggressive rebuilding plans have been implemented which include zero fishing allowance. Two crab stocks (Pribilof Islands blue king crab and snow crab) remain at very low levels and are considered overfished, although climactic factors, rather than fishing, are the likely reasons.

### Pacific Halibut

Pacific halibut biomass is at all-time high levels, with annual catch limits approaching 100 million pounds.

### Pollock

Pollock biomass in the Bering Sea is also at all-time high levels, with a 2003 overfishing level of 3.5 million metric tons, and an ABC level of 2.3 million metric tons. The Council set the 2003 TAC at a conservative 1.5 million metric tons.

## BYCATCH

Controlling bycatch has been a major focus of fisheries management off Alaska since the development of the first fishery management plans. From 1978 through 1996, numerous amendments to the Bering Sea/Aleutian Islands and Gulf of Alaska Groundfish FMPs were adopted to limit the bycatch of prohibited species or groundfish. Prohibited species catch (PSC) limits were established for halibut, salmon, crab, and herring. When bycatch limits have been reached, fisheries responsible for the bycatch have been closed for the rest of the season, or prohibited from fishing in areas with historically high bycatch rates. Several closures to bottom trawling were established to limit the bycatch of crabs in the Bering Sea and Gulf of Alaska. The PSC limits and closure areas have controlled bycatch of these species to less than 1 percent of their biomass (except for chinook salmon which is about 2 percent). The bycatch of groundfish has been controlled by the TACs, as well as other measures. All groundfish, whether retained or discarded, have accrued towards the annual catch limit for each species. The comprehensive at-sea observer program, which was established in 1990, has allowed for the accurate enumeration of target catch, bycatch, and discards. As a consequence of these measures, bycatch in the groundfish fisheries no longer raises direct conservation concerns, but has continued to be a significant allocation and social issue.

Since the implementation of the Sustainable Fisheries Act in 1996, several



## North Pacific Fishery Management Council

additional measures have been adopted and implemented to further reduce bycatch and discards. These measures include (1) a ban on the use of bottom trawls for pollock in the Bering Sea and Aleutian Islands; (2) implementation of limited entry programs to reduce capacity and fishing effort; (3) allocation of Pacific cod among gear types; (4) additional bottom trawl closures in the Gulf of Alaska; (5) further reductions in the chinook salmon PSC limits; (6) a prohibition on any directed fishery for forage fish along with an associated bycatch limit for these species; and (7) implementation of improved retention and utilization requirements for pollock and Pacific cod. In particular, the improved retention and utilization (IR/IU) program, which was implemented in 1998, requires retention of all pollock and Pacific cod harvested, regardless of time, area, gear type, of target fishery. In addition to prohibiting all discarding, the IR/IU program provides an incentive for fishermen to avoid catching these species if they were not targeted because they take up limited space in the fish holds. The combination of these seven regulations has further reduced the overall discard rate in the groundfish fisheries from about 16 percent in 1996 to 7 percent in 2001 and 2002.

### ESSENTIAL FISH HABITAT

Ocean habitat is essential for maintaining productivity of fisheries resources, and is a key component of ecosystem-oriented management.

The North Pacific region can be proud of its record with regard to habitat conservation. A preliminary evaluation recently completed by NOAA Fisheries concluded that no Council-managed fishing activities have more than minimal and temporary effects on EFH of managed species. Additionally, the analysis concluded that all fishing activities combined have minimal effects on benthic habitat in the North Pacific

Numerous measures have been implemented to protect habitat from potential negative impacts caused by fisheries. These measures include gear restrictions, area closures, and limits on fishing effort. In particular, closure areas to trawling have been applied in sensitive habitat areas. The entire eastern Gulf of Alaska, about 60,000 square nautical miles, is permanently closed to all trawling, in part for protection of gorgonian corals and other benthic species. In addition, in the Bering Sea, year-round bottom trawl closures encompass about 30,000 square nautical miles, an area twice the size of the Georges Bank off the eastern U.S. coast. Measures recently approved relative to

Steller sea lion protection provide full or partial closure to an additional 58,000 square nautical miles of ocean.

The success of the North Pacific region in conserving habitat is also due to limits on fishing effort. Fishing effort in groundfish fisheries has been limited directly through a license limitation program, individual fishing quotas, community development quotas, and the limitation on vessels and establishment of cooperatives in the pollock fishery as authorized by the American Fisheries Act. A recent report by National Academy of Science noted that, when compared to the rest of the United States, the continental shelf off Alaska is subjected to relatively low bottom trawl effort and of the areas fished, the intensity of bottom trawl fishing is relatively low and has been reduced over time. Total bottom trawling effort (measured in number of tows) declined significantly off Alaska during the 1990s, with a 30 percent reduction in effort in the Bering Sea, a 50 percent reduction in the Gulf of Alaska, and a 33 percent reduction in the Aleutian Islands area.

Steller sea lions have been declining in the western portion of their range since 1970, and were listed as endangered in 1997. While the North Pacific Council enacted a number of measures prior to that time, including closed areas around rookeries and haul-out sites, a comprehensive suite of measures was developed from 1999 through 2001, which are currently in place to accommodate concerns over potential competition between groundfish fisheries and foraging sea lions. These measures include extensive closures to critical habitat areas; expanded closure of areas around rookeries and haul-outs; and, spatial and temporal distribution of fisheries for key prey species, including limits on removals from certain areas and times of the year. Pollock, Pacific cod, and Atka mackerel fisheries have been prohibited or severely restricted throughout most of these areas since 2002.



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### Pacific Fishery Management Council

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[www.pcouncil.org](http://www.pcouncil.org)



### Mid-Atlantic Fishery Management Council

Dan Furlong, Executive Director  
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[www.mafmc.org](http://www.mafmc.org)



### Western Pacific Fishery Management Council

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[www.wpcouncil.org](http://www.wpcouncil.org)



### New England Fishery Management Council

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50 Water Street, Mill 2  
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[www.nefmc.org](http://www.nefmc.org)



### Gulf of Mexico Fishery Management Council

Wayne Swingle, Executive Director  
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3018 U.S. Highway 301 North, Suite 1000  
Tampa, Florida 33619-2266  
Phone: (813) 228-2815, (888) 833-1844 (toll-free)  
[www.gulfcouncil.org](http://www.gulfcouncil.org)



### National Marine Fisheries Service

**NOAA Fisheries**  
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1315 East West Highway, SSMC3  
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[www.nmfs.noaa.gov](http://www.nmfs.noaa.gov)



### Caribbean Fishery Management Council

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[www.caribbeanfmc.com](http://www.caribbeanfmc.com)



*“The American fisheries management process is a shining example of true, participatory Democracy. User groups and concerned citizens have the opportunity to shape our success as stewards of the environment for the economic and social benefit to the nation. Diverse perspectives and a growing body of renowned science over the past three decades have improved America’s understanding about our oceans and our ability to balance conservation and use of our living marine resources. As we rebuild our fish stocks, protect our marine habitats, and refine our fishing gear to reduce unintentional catches, we look to a future of continued advancements in our science and management and healthy, bountiful oceans for future generations.”*

*— Dr. William Hogarth, Director  
National Marine Fisheries Service  
(NOAA Fisheries)*