

FISHERIES OF THE UNITED STATES

By Kim Iverson and Anna Martin

Let's go fishing! These words may bring to mind fond memories of family fishing trips to the coast or a recent charter trip offshore. For some, it signals the beginning of a multi-day trip on board a commercial fishing vessel in hopes of bringing home a profitable catch. In the United States, marine fisheries are as diverse as the people who live along the country's coastal shores and islands, and they constitute an important part of the social and economic viability of coastal communities and the national economy.

SOCIOECONOMIC IMPORTANCE

U.S. commercial and recreational fishing generated more than \$185 billion in sales and supported more than two million jobs in 2006, the most recent year for which statistics are available. The U.S. commercial fishing industry—harvesters, seafood processors and dealers, seafood wholesalers, and seafood retailers—generated \$103 billion in sales and \$44 billion in income and

supported 1.5 million jobs. Recreational fishing generated \$82 billion in sales and \$24 billion in income and supported 534,000 jobs in the United States.

The economic value inherent in commercial fisheries throughout the country is on the rise. While landing totals within the commercial sector declined 11 percent between 2007 and 2008, the values of those landings rose by five percent. Finfish accounted for 87 percent of the total landings, but only 51 percent of the value. Species such as crabs, shrimp, scallops, and lobster remain an important part of U.S. fisheries.

During 2008, over 12 million anglers made approximately 85 million marine recreational fishing trips off of the Atlantic, Gulf, and Pacific coasts and caught an estimated 464 million fish. Of this catch, 58 percent were released alive. Nationally, most of the recreational catch was taken from state and inland waters with an estimated eight percent of total catches coming from federal waters. The Atlantic coast accounted for the majority of angler trips (more than 61 percent) and catch (54 percent). Along the Atlantic coast, black sea bass, Atlantic cod, dolphinfish, and summer flounder are commonly targeted offshore species.

REGIONAL FISHERIES

North Pacific

In 2008, commercial fishermen unloaded 612.7 million pounds of fish (mostly pollock) and shellfish at the port of Dutch Harbor-Unalaska, Alaska, making it the country's top commercial port for the amount of fish landed for the 20th consecutive year. The North Pacific Fishery Management Council is responsible for management of the commercial groundfish fisheries, including Pacific cod, pollock, flatfish, mackerel, sablefish, and rockfish species using trawl, hook and longlines, jig, and pot gear. The combined landings for the North Pacific fishery totaled four-billion pounds in 2008 and was valued at \$815 million to the fishermen (ex-vessel revenue).

Recently made famous by the television show *Deadliest Catch*, Alaska's crab fisheries produce more than one-third of the total U.S. crab catches and include king, snow, and Dungeness crab. Collectively, U.S. landings of king crab and snow crab totaled more than \$220 million dollars in 2008. Alaska is also a popular destination for recreational fishermen targeting halibut and salmon.

Pacific

Federal waters off the coasts of Washington, Oregon, and California are managed by the Pacific Fishery Management



Shrimp nets in the South Atlantic.

Rank	Species	Pounds
1	Pollock	2,298,112
2	Menhaden	1,341,413
3	Flatfish	663,116
4	Salmon	658,342
5	Hakes	549,572
6	Cod	513,027
7	Crabs	325,184
8	Herring (sea)	259,597
9	Shrimp	256,597
10	Sardines	193,078

Rank	Species	Dollars
1	Crabs	562,267
2	Shrimp	441,818
3	Salmon	394,594
4	Scallops	371,641
5	Lobster	336,902
6	Pollock	334,477
7	Cod	304,895
8	Halibut	217,735
9	Clams	186,718
10	Flatfish	184,209

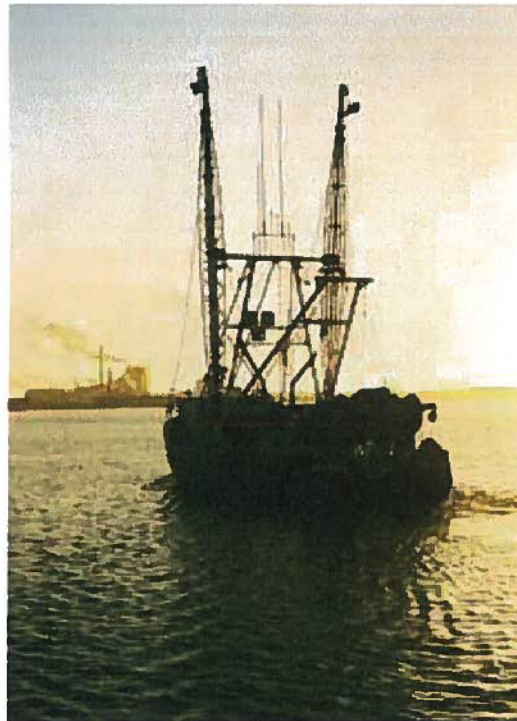
Table 1. Major U.S. Domestic Species Landed in 2008. Ranked by "Quantity" and "Value" (numbers in thousands).

Council where salmon, groundfish, coastal pelagic species, and highly migratory species such as tunas, sharks, and swordfish are the most common fisheries.

Salmon provide both spiritual and physical sustenance to Native American tribes in this region and have symbolic importance for the entire Northwest. The salmon fishery also includes recreational anglers and commercial fishermen (using troll and gillnet). Recently, low returns for Chinook and coho salmon have been recorded from the Klamath and Sacramento River systems, which have traditionally supported the fishery for a large part of the West Coast. The Pacific Council took the unprecedented action of closing all ocean Chinook salmon fisheries off California and most of Oregon in 2008 and 2009.

The groundfish fishery consists of over 90 species, a complex made up of rockfish, flatfish, roundfish, sharks, skates, and others. Commercial trawlers account for most groundfish landings, but these fish are also caught recreationally. The West Coast trawl groundfish fishery is currently being put under a catch share program.

Coastal pelagic species include northern anchovy, market squid, Pacific herring, sardines, and mackerel. They are targeted primarily with seines and nets. During the 1930s, Pacific sardines were the largest U.S. fishery in volume, with catches off the central California coast of over 200,000 metric tons. The fishery—which is the subject of John Steinbeck's famous novel *Cannery Row*—collapsed by the late 1940s. It has been a long held belief that the collapse was the result of overfishing. Recent evidence indicates that natural interdecadal fluctuations and the



Pacific coast trawler.



Traditional sailing canoe off Guam. According to archaeological research, pelagic fish accounted for a high proportion of the fish caught and eaten by the Chamorro people of Guam and Rota prior to Western contact.

sensitivity of sardines and anchovies to ocean temperature may have also played roles. The sardines have made a strong biological comeback over the past decade.

Western Pacific

The Western Pacific Region includes the State of Hawaii, U.S. Territories of American Samoa and Guam, Commonwealth of the Northern Mariana Islands, and eight U.S. Pacific remote island areas. Its inhabitants include: large Native Hawaiian, Samoan, Chamorro, and Refaluwasch populations with cultural ties to fishing that span millennia. All U.S. Pacific island communities are considered coastal, and the annual per capita consumption of seafood in Hawaii is 41 pounds, about three times the national average of 16.5 pounds.

The largest commercial fisheries target highly migratory pelagic fish within federal waters and on the high seas. Honolulu ranks among the nation's top five fishing ports in value of landings (\$73.3 million in 2008) because of the quality of the high value, fresh (not frozen) tuna and swordfish harvested by the Hawaii-based longline fishery. The Kona charter fishery is the world's largest blue marlin targeting charter fishery. American Samoa is home to one of the world's largest tuna canneries, processing foreign and U.S. caught skipjack, albacore, bigeye, and yellowfin tuna.

The nearshore fisheries are socially and culturally important, with a high number of participants in the U.S. Pacific islands. In Hawaii, more than 25 percent of the households surveyed engage in non-commercial pole-and-line fishing (QMark 2005). Commercial and non-commercial fishermen regularly harvest several hundred species of bottomfish, crustacean, and coral-reef-related species. Additionally, the deepwater precious coral fishery has been sustainably managed for a half century. A significant commercial lobster fishery in the Northwestern Hawaiian Islands (NWHI) was permanently closed by Presidential executive orders that proclaimed a 1,200-mile chain of small islands and

atolls as a reserve and then a marine national monument. The NWHI limited entry bottomfish fishery will close in 2011 for the same reason.

No purely domestic fishery managed by the Council is experiencing overfishing. Bigeye tuna, a pan-Pacific population, is experiencing overfishing and is managed under two tuna fishery management conventions, which have imposed bigeye catch limits. The only overfished fishery is the armorhead stock at Hancock Seamount, which was depleted prior to Council existence and has been under a series of moratoria since 1986. Most of the stock lies in the international waters of the Emperor Seamounts.

New England

For centuries, Atlantic groundfish stocks have supported a fishery that has served to shape the economy and culture of New England. Fishing for groundfish species, which often school together near the ocean bottom, was the first colonial industry in America. The fishing ports of Gloucester and New Bedford, Massachusetts became icons of U.S. commercial fishing, where ships loaded with Atlantic halibut, ocean perch, haddock, yellowtail flounder, and cod fish once fed millions of Americans. Foreign fleets in the 1960s and 1970s targeted these same stocks, removing millions of pounds of fish over a very short period of time. Development of advanced gear technologies, electronic navigation, fish-finding tools, and increased vessel power during the 20th century all greatly expanded this fishery and led to severe declines of almost all of New England's groundfish stocks.

With too many vessels chasing too few fish, the groundfish fishery reached an all-time low by 1994. Fishery managers began to implement seasonal and year-round area closures, gear restrictions, minimum size limits, limited access, and restrictions on the number of days a vessel is allowed to fish; and some of the 19 species in the management plan began to rebuild. Increases for several stocks are being observed for the first time in nearly a decade, including cod and haddock.

The sea scallop resource off of New England is at historic high levels, with landings in the last five years each in excess of 50 million pounds annually and a value of nearly \$370 million dollars in 2008. Although the stock had experienced overfishing, the resource has recovered through effort controls, including a program that rotates access to harvest areas.

Mid-Atlantic

In the Mid-Atlantic region, measures were implemented to prevent overfishing on surfclams, ocean quahogs, Atlantic mackerel, scup, bluefish, monkfish, spiny dogfish, and tilefish. In 1990, individual transfer quota (ITQ) programs that allocated catch amounts to individual vessel owners were established for the surfclam and ocean quahog fisheries. This was the first time in the U.S. where this type of management strategy was implemented. The ITQ system was implemented because of economic issues.

Over four million recreational anglers in this region fish for bluefish, summer flounder, scup, mackerel, tilefish, croaker, striped bass, and black sea bass on a yearly basis. The black sea bass stock is rebuilt as a result of the measures put in place by the Mid-Atlantic Fishery Management Council, which began managing the stock in 1996.

Both commercial and recreational fishermen are involved in a Mid-Atlantic Research Set-Aside program. This unique program was created as a vehicle to fund research projects through the sale of research quota. Proceeds from the sale of research quota are used to pay for research costs and to compensate fishing vessels that harvest research quota. No direct federal funds are provided for research.

South Atlantic

From the Outer Banks of North Carolina to the tropical waters off the Florida Keys, the fisheries managed by the South Atlantic Fishery Management Council are as diverse as the creatures and habitats that stretch along more than 1,000 miles of coastline. The area includes Islamorada, Florida, boasting itself the "Sportfishing Capital of the World," and many historical fishing communities with diverse commercial fleets scattered along the coasts of the Carolinas, Georgia, and eastern Florida.

As the human population continues to grow in the southeast, so does pressure on the region's marine resources. The total number of anglers in the South Atlantic increased by 55 percent between 1997 and 2006, and this trend is expected to continue. Of the estimated 52 million marine recreational trips taken in the U.S. in 2008, almost 22 percent were made in east Florida,



Brightly colored dolphin (sometimes referred to as mahimahi or dorado) and wahoo are two popular sport fish caught in the Florida Keys, the "Sportfishing Capital of the World."

followed by nearly 14 percent in North Carolina. Species such as dolphinfish (mahimahi), wahoo, king and Spanish mackerel, sea bass, snappers, groupers, and spiny lobster are popular targets for both recreational and commercial fishermen.

Seven of the eight fisheries managed by the South Atlantic Council are being fished at sustainable levels. Only the snapper and grouper fishery has species that are experiencing overfishing. With 73 species in the management complex, the mixed-species nature of the fishery offers the greatest challenge for successful management. Mandates to end overfishing are forcing the Council to consider closing large areas to all fishing for these popular reef-dwelling species, with severe economic and social consequences to both the commercial and recreational fisheries.

U.S. Caribbean

The crystal waters off the coasts of Puerto Rico and the U.S. Virgin Islands attract both commercial and recreational fishermen targeting spiny lobster, queen conch, and the numerous species associated with the area's tropical reefs. More than 230,000 recreational fishermen make more than 1.4 million fishing trips in this area each year. Regional species managed by the Caribbean Fishery Management Council know no jurisdictional boundaries and often move between waters surrounding the Caribbean and international waters, necessitating management coordination with other countries.

The Council's Shallow Water Reef Fish Management Plan, implemented in 1985, covers 140 species including popular snappers and groupers. Seasonal area closures have been used to protect spawning aggregations, but the complexity of the multispecies fishery, together with the high diversity of species caught on every trip, continues to present challenges to scientists and managers.

Despite management measures implemented since 1981, landings, catch rates, and abundance for spiny lobsters have continued to decline. The Council is working to increase enforcement and data collection to help improve the condition of the lobster resource in the region. Harvest of queen conch, targeted by both commercial and recreational divers for their meat and attractive shells, continues to increase. The Council has implemented minimum size limits in an effort to rebuild this species throughout its range.

Gulf of Mexico

The commercial shrimp fishery in the Gulf of Mexico is the nation's largest, comprising 73 percent of the nation's total landings of 256.6 million pounds valued at more than \$440 million dollars in 2008. Louisiana alone contributed 89 million pounds, yet the overall Gulf harvest dropped 20 percent compared to 2007. Competition from cheaper foreign imports, increased operating costs, and other factors have led to an overall decrease over the past few years.



Councils manage non-commercial and commercial fisheries. Pictured are sashimi-quality tuna from the Hawaii longline fishery being sold at the Honolulu fish auction.

Reef fish, king and Spanish mackerel, spiny lobster, stone crab, and red drum are also economically important species managed by the Gulf of Mexico Fishery Management Council. The Council has used marine protected areas, gear restrictions, and seasonal closures as a tool for the conservation and management of the region's resources. In addition to managing traditional fisheries, the Council recently developed a plan to regulate offshore aquaculture in the region.

The mixed-species nature of the reef fish complex presents challenges for managers. To help address problems resulting from overcapacity and the derby nature of the fishery, the Gulf Council recently implemented a catch share program for the commercial harvest of red snapper. A similar type of management program for grouper and tilefish is expected to begin in 2010.

CONCLUSION

Marine fisheries in the United States are highly regulated, and fishery managers continue to work toward sustainable fisheries for all economically important stocks. While some stocks are threatened by overfishing or continue to be listed as overfished, the majority of domestically assessed fish stocks are either not subject to overfishing (84 percent) or not overfished (77 percent). New requirements to implement annual catch limits and end overfishing through the reauthorized Magnuson-Stevens Fishery Conservation and Management Act will help to reach the goal of sustainable fisheries.

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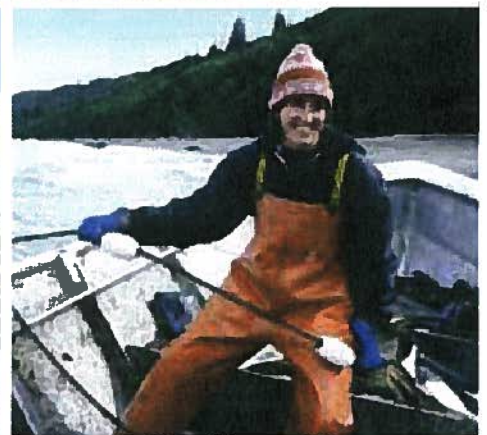
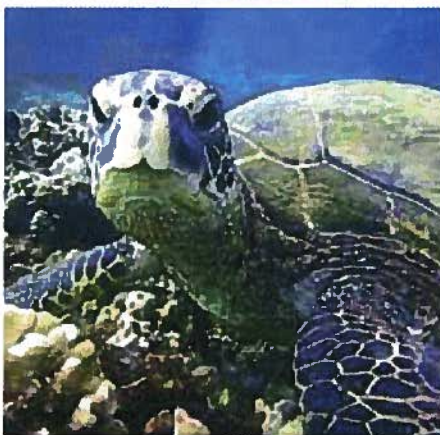
Mid-Atlantic traps.



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