

U.S. MARINE RECREATIONAL FISHERIES

DATA COLLECTION. While data on commercial fisheries was collected for many years, prior to 1979 there was no continuous, systematic collection of marine recreational fishery data. Detailed information on marine recreational fishing is required to support a variety of fishery management and development purposes and is mandated by the Magnuson Fishery Conservation and Management Act, Public Law 94-265, as amended. Therefore, NMFS began the comprehensive Marine Recreational Fishery Statistical Survey (MRFSS) in 1979. Data collected through the MRFSS show that recreational fisheries have tremendous impacts on fish stocks. For several important species recreational landings surpass commercial landings.

The MRFSS data collection consists of an intercept survey of anglers in the field and a telephone survey of coastal county households. These independent components, along with census information, are combined to produce estimates of recreational catch, effort, and participation. Estimates are generated by subregion, state, species, mode and primary area fished. In addition, information on catch rates and measurements of fish lengths and weights are obtained.

The MRFSS is being conducted in 1997 along the coast of the entire continental United States except the state of Texas. The MRFSS was conducted in the following areas and years:

Atlantic and Gulf (except Texas), 1979-1996;
Texas 1981-1995;
Pacific (not including Alaska), mid-1979 through
1989, 1993 - 1996;
Western Pacific, 1979 through 1981; and
Caribbean, 1979, 1981.

In 1995, the MRFSS estimation process was updated to reflect results of statistical research on the survey. Improvements included 1) statistical substitution for missing data, 2) replacement of missing weights, and 3) telephone survey sample weighting by county. Atlantic and Gulf coast data for all years were also run through rigorous cleaning programs. Pacific coast data for 1993-1996 were also cleaned, while cleaning of 1981-1989 is underway. Due to the updating of the statistical process, historical estimates for 1981 to 1993 for the Atlantic and Gulf coasts and for 1993 for the Pacific coast were recalculated. Data from 1979-1980 were not recalculated since telephone data by county were not kept in those years. This publication contains the new estimates for all years since 1981. Old MRFSS publications are now obsolete and should be discarded. Most estimates did not change dramatically, and in all cases, fisheries trends did not change.

Estimates of trips, participation and catch from the MRFSS for the Atlantic, Gulf and Pacific coasts for 1996 are presented in the following tables. Data from other NMFS and state surveys (SE head boats, Texas, California Passenger Fishing Vessels (for-hire), Oregon and Washington ocean boat fishing, Pacific coast salmon estimates, and Alaska) are not included here in order to show the revised MRFSS historical data.

DATA TABLES. The total number of fish caught and the weight of the harvest are presented for sixty-four commonly caught species on the Atlantic, Gulf, and Pacific coasts. Total number caught includes fish which were brought ashore in whole form and were available for identification, weighing, and measuring as well as fish which were not available for identification. This latter category includes fish which were used for bait, discarded, filleted or released alive.

Trips and numbers of participants are presented by state and total catch and harvest weight estimates are presented by subregion. Weight estimates apply to harvest, not catch, and do not include fish that were released alive. Total catch in numbers of fish do include fish that were released alive. Catch and harvest weight estimates are also shown by primary fishing area. The fishing areas are: state territorial seas, or ocean 3 miles or less from land; Exclusive Economic Zone (EEZ), or ocean more than 3 miles from land; and inland (sounds, rivers, bays). The state territorial sea for Florida's Gulf coast is 10 miles or less from land.

All estimates are shown with their proportional standard errors (PSE). PSE's express the standard error of an estimate as a percentage of the estimate and are a measure of precision. Usual (95%) confidence intervals for estimates are calculated as a lower limit of the estimate minus 1.96 times the standard error and an upper limit of the estimate plus 1.96 times the standard error. Example: Estimated trips of 64 million with a PSE of 1% means an upper limit of 65,254,400 (1.96 times 1% of 64 million) and a lower limit of 62,745,600. A 95% confidence interval indicates a 95% certainty that the true value lies between the lower and upper limits.

Sampling coverage by wave (two-month sampling periods) has varied across the time series. More detailed information as well as the ability to summarize data by year, wave, state, fishing mode and/or area are available on the Fisheries Statistics and Economics web page (<http://remora.ssp.nmfs.gov>) and will be available in a separate MRFSS report to be published later.

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1996 MRFSS DATA. In 1996, over 8 million people made 64 million marine recreational fishing trips on the Atlantic, Gulf and Pacific coasts. The marine recreational finfish catch in 1996 was an estimated 313 million fish. Over 50% percent of the catch was released alive. The total weight of the harvest (excluding fish released alive) was an estimated 208 million pounds.

The Atlantic and Gulf coasts accounted for 79% of the participants, 88% of the fishing trips, and 89% of the total U.S. marine recreational finfish catch by number. Nationwide, 55% of the catch came from inland waters, 31% came from state territorial seas, and 13% came from the EEZ. This distribution is different for the Atlantic and Gulf versus the Pacific coasts. On the Atlantic and Gulf coasts the majority of the catch was from inland waters, while on the Pacific coast, the majority of the catch was from the state territorial seas.

ATLANTIC AND GULF. The number of Atlantic and Gulf coast trips made from 1981 to 1996 ranged from a low of 44 million trips in 1981 to a high of 60 million in 1986 with no clear trend. The number of people engaged in marine recreational fishing on the Atlantic and Gulf coast ranged from a low of 6.3 million in 1989 to a high of 8.9 million in 1983. In 1996, 8.8 million marine recreational fishing participants took 56 million trips and caught a total of 280 million fish.

By subregion, the Gulf of Mexico accounted for the highest numbers of fish caught (42%) in 1996 followed by the Mid-Atlantic (31%). Thirty percent of the Atlantic and Gulf coast recreational fishing trips were made in the South Atlantic, 29% in the Gulf of Mexico, 29% in the Mid-Atlantic, and 12% in the North Atlantic.

The most commonly caught non-bait species (numbers of fish) in 1996 were spotted seatrout, summer flounder, Atlantic croaker, black sea bass, bluefish, and striped bass. Top-ranked non-bait species by subregion were striped bass in the North Atlantic, summer flounder in the Mid-Atlantic, spot in the South Atlantic, and spotted seatrout in the Gulf of Mexico. By weight, the largest harvests were bluefish, striped bass, red drum, dolphin, spotted seatrout, summer flounder, and king mackerel. Average weights for all fish combined was 1.5 pounds while the average weight for the top harvests were 3.2 pounds for bluefish, 11.2 for striped bass, 4.6 for red drum, 7.6 for dolphin, 1.3 for spotted seatrout, 1.4 for summer flounder, and 9.9 for king mackerel.

Although there is no clear trend for all species combined, historical trends in number of fish caught do appear for some species. Spotted seatrout catch increased since the early 1980's from less than 15 million fish to about 20 million. Summer flounder catches were 13 million or more fish until two

very low years with less than 10 million fish in 1989 and 1990, followed by an increase back to levels similar to the early 1980's. Most of the decrease in 1989-1990 occurred in the Mid-Atlantic. Atlantic croaker and black sea bass showed no clear trends. Bluefish show a general decrease in numbers caught from highs near 30 million fish in the early 1980's to lows near 10 million fish since 1992. The catch of striped bass increased steadily and dramatically since 1990 with a record catch of over 14 million fish in 1996. Over 90% of these fish were released alive in 1996.

Thirteen percent of the total marine recreational catch on the Atlantic and Gulf coasts came from the EEZ. The most commonly caught species in federally managed waters were black sea bass, Atlantic mackerel, dolphin, red snapper, and bluefish.

PACIFIC. In 1996, 1.8 million marine recreational fishing participants took 7.8 million trips on the Pacific coast and caught a total of 34 million fish. Seventy-three percent of the Pacific coast recreational fishing trips (excluding salmon and California for-hire boat trips) were made in California, followed by 21% in Washington, and 6% in Oregon.

Commonly caught species in 1996 (by numbers) were Pacific mackerel, surf smelt, white croaker, kelp bass and barred sand bass. By weight, the largest harvests were California halibut, Pacific mackerel, black rockfish, barred sandbass, and lingcod. Average weights for all fish combined was 1.1 pounds while the average weight for the top harvests were 7.7 pounds for California halibut, 0.9 for Pacific (chub) mackerel, 1.9 for black rockfish, 1.6 for barred sandbass, and 6.7 for lingcod.

Historical trends in number of fish can not be examined until the 1981-1989 estimates are recalculated; however, there are some changes that should be noted. In 1996, surf smelt jumped from the 1993-1995 average of a little over a million fish to almost 5 million fish. California halibut catch steadily increased from 347,000 fish in 1993 to 712,000 fish in 1996. Pacific mackerel reached a 4-year high in 1996 with 5.5 million fish caught. It should be noted, however, that the 1996 data include Washington state catches whereas the 1993-1995 data do not.

Eleven percent of the total marine recreational catch on the Pacific coast came from the EEZ. The most commonly caught Pacific coast species in federally managed waters for 1996 were Pacific mackerel, barred sand bass, Pacific barracuda, kelp bass, and white croaker. The percent of the catch from the state territorial sea dropped from above 65% in 1993-1995 to 51% in 1996, while the inland catch increased from 13-17% to 38% of the catch.