Annual Report of the United States

U.S. Department of Commerce, NOAA Fisheries

1. NATIONAL FISHERIES INFORMATION

Total (preliminary) reported U.S. catch of tuna and tuna-like fishes (including swordfish, but excluding other billfishes) in 2006 was 18,081 MT, a decrease of about 6 % from 19,261 MT in 2005. Estimated swordfish catch (including estimated dead discards) decreased 339 MT to 2,048 MT, and provisional landings from the U.S. fishery for yellowfin increased in 2006 to 7,075 MT from 5,568 MT in 2005. U.S. vessels fishing in the northwest Atlantic landed in 2006 an estimated 468 MT of bluefin, a decrease of 245 MT compared to 2005. Provisional skipjack landings increased by 30.1 MT to 60.8 MT from 2005 to 2006, estimated bigeye landings increased by 503 MT compared to 2005 to an estimated 987 MT in 2006, and estimated albacore landings decreased from 2005to 2006 by 91MT to 397MT.

2. STATISTICS AND RESEARCH

2.1 Fisheries Statistics

2.1.1 Tropical Tuna Fishery Statistics

Yellowfin Tuna. Yellowfin is the principal species of tropical tuna landed by U.S. fisheries in the western North Atlantic. Total estimated landings increased to 7,075 MT in 2006, from the 2005 landings estimate of 5,568 MT (Appendix Table 2.1-YFT). The 2006 estimate is considered provisional and may change owing to incorporation of late reports of commercial catches as they become available and to possible revisions in estimates of rod & reel catches made by recreational anglers. A high proportion of the estimated landings were due to rod & reel catches of recreational anglers in the NW Atlantic (4,649 MT). Estimates of U.S. recreational harvests for tuna and tuna-like species continue to be reviewed and this may result in the need to report additional revisions to the available estimates in the future. Nominal catch rate information from logbook reports (longline catch per 1,000 hooks) for yellowfin by general fishing areas is shown in Appendix Figure 2.1-YFT.

Skipjack Tuna. Skipjack tuna also are caught by U.S. vessels in the western North Atlantic. Total reported skipjack landings (preliminary) increased by 30.1 MT to 60.7 MT from 2005 to 2006 (Appendix Table 2.1-SKJ). Estimates of recreational harvests of skipjack continue to be reviewed and could be revised again in the future. Appendix Figure 2.1-SKJ presents nominal catch rate information (longline catch per 1,000 hooks) based on fishing logbook reports.

Bigeye Tuna. The other large tropical tuna reported in catches by U.S. vessels in the western North Atlantic is bigeye tuna. Total reported catches and landings (preliminary) for 2006 increased by 503 MT from 484 MT in 2005 to 987 MT (Appendix Table 2.1-BET). Note that like yellowfin, the estimates of rod & reel catch are considered provisional and may be revised based on results of a future review of recreational harvest estimates. Appendix Figure 2.1-BET presents nominal catch rate information (longline catch per 1,000 hooks) based on fishing logbook reports.

2.1.2 Temperate Tuna Fishery Statistics

Bluefin Tuna. The U.S. bluefin fishery continues to be regulated by quotas, seasons, gear restrictions, limits on catches per trip, and size limits. To varying degrees, these regulations are designed to restrict total U.S. landings and to conform to ICCAT recommendations. U.S. 2006 provisional estimated landings and discards from the northwest Atlantic (including the Gulf of Mexico) were 468 MT and 91 MT, respectively. Those estimated landings and discards represent a decrease of 289 MT from the 2005 estimates, and are 507 MT less than the 2004 estimates. The 2006 landings by gear were: 4 MT by purse seine, 30 MT by harpoon, less than 1 MT by handline, and 149 MT by longline (including discards) of which 51 MT were from the Gulf of Mexico.

In response to 1992 regulations limiting the allowable catch of small fish by U.S. fishermen, in conformity with ICCAT agreements, enhanced monitoring of the rod and reel fishery was implemented in 1993 for the purpose of providing near real-time advice on catch levels by this fishery. This monitoring activity has continued and has included estimation of catches by finer scale size categories than reported above. The preliminary estimates for the 2006 rod and reel fishery off the northeastern U.S. (including the North Carolina winter fishery) for landings in several size categories were 78 fish < 66 cm, 1567 fish 66-114 cm, 2929 fish 115-144 cm and 736 fish 145-177 cm (an estimated 0.3, 28, 130, and 53 MT, respectively). Note that additional rod and reel landings of bluefin >177 cm SFL, monitored through a sales reporting system, are included in Table 2.2-BFT.

Albacore. Albacore are landed by U.S. vessels; however, historically, albacore has not been a main focus of the U.S. commercial tuna fisheries operating in the North Atlantic. Reported commercial catches were relatively low prior to 1986; however, these catches increased substantially and have remained at higher levels throughout the 1990s, with nearly all of the production coming from the northeastern U.S. coast. The U.S. landings from the Caribbean increased in 1995 to make up over 14% of the total U.S. harvest of albacore, but have since remained below 4% of the total. Nominal catch rate information from U.S. longline logbook reports are shown in Appendix Figure 2.1-ALB. Estimated total catches of albacore were 396 MT in 2006, a decrease of 93 MT from 2005 (Appendix Table 2.2-ALB).

2.1.3 Swordfish Fishery Statistics

For 2006, the provisional estimate of U.S. vessel landings and dead discards of swordfish was 2,048 MT (Appendix Table 2.3-SWO). This estimate is lower than the estimate of 2,387 MT for 2005. The provisional landings, excluding discard estimates, by ICCAT area for 2005 (compared to 2004) were: 283MT (414 MT) from the Gulf of Mexico (Area 91); 1,068 MT (1,061MT) from the northwest Atlantic (Area 92); 88 MT (137 MT) from the Caribbean Sea (Area 93); and 373 MT (550 MT) from the North Central Atlantic (Area 94A).

U.S. swordfish landings are monitored in-season from reports submitted by dealers, vessel owners and captains, NMFS port agents, and mandatory daily logbook reports submitted by U.S. vessels permitted to fish for swordfish. This fishery is also being monitored via a scientific observer sampling program, instituted in 1992. Approximately 8% of the longline fleet-wide fishing effort is randomly selected for observation during the fishing year. The observer sampling data, in combination with logbook reported effort levels, support estimates of approximately 15,520 fish discarded dead in 2006. For the North Atlantic, the estimated tonnage discarded dead in 2005 is 183 MT, of which 175 is estimated due to longline gear. Overall, the estimates of dead discarded catch decreased by 79 MT compared to the 2005 levels, and decreased from about 11% to 9% of the landed catch.

Total weight of swordfish sampled for sizing U.S. landings by longline, trawl, and handline was 1,320 MT, 2 MT, and 22.3 MT in 2006. The weight of sampled swordfish landings in 2006 were 99%, 73%, and 87% of the U.S. total reported annual landings of swordfish for longline, trawl, and handline, respectively. Again, incorporation of late reports into the estimated 2006 landings figure will likely result in changes in the sampled fraction of the catch. Recent estimates of rod and reel landings of swordfish based on surveys of recreational anglers, range from about 5-48 MT per year within the period 1996-2006.

2.1.4 Marlins and Sailfish Fishery Statistics

Blue marlin, white marlin, and sailfish are landed by U.S recreational rod and reel fishermen and are a discarded by-catch of the U.S. commercial tuna and swordfish longline fisheries. The U.S. Fisheries Management Plan for Atlantic Billfishes was implemented in October, 1988. The Plan allows billfish that are caught by recreational gear (rod and reel) to be landed only if the fish is larger than the minimum size specified for each species covered by the Plan. Recreational landings of each billfish species can be estimated using: (a) the SEFSC Recreational Billfish Survey (RBS) which provides the number of billfish caught during tournaments held along the southeastern U.S. coast (south of 35^0 N latitude), in the Gulf of Mexico, and U.S. Caribbean Sea regions (i.e., U.S. Virgin Islands and Puerto Rico); (b) the Large Pelagics Recreational Survey (LPS) conducted by the National Marine Fisheries Service which provides estimates of recreational billfish harvest from waters along the northeastern U.S. (north of 35^o N latitude); (c) Marine Recreational Fishery Statistics Survey (MRFSS); (d) a Headboat survey (large multi-party charter boats); and/or (e) a coastal sportfishing survey of the Texas recreational fishery (TPW). Studies conducted indicate that use of a time-series running average from the US general marine recreational fishing survey (MRFSS) in combination with data from the RBS or other surveys may provide the most reliable estimates of overall recreational catch and landings for marlins. These methods have been applied for white marlin and sailfish.

Due to concerns over estimates of rod and reel catches landings of marlins, estimates for 2003 and 2004 were reviewed by a scientific committee convened to advise on the appropriateness of the methods and data used and to recommend future improvements needed to reduce uncertainty in the estimates. The preliminary estimates of 2006 U.S. rod and reel landings for these billfish species, combining the geographical areas of the Gulf of Mexico (Area 91), the northwestern Atlantic Ocean west of the 60^{o} W longitude (Area 92), and the Caribbean Sea (Area 93) are: 17 MT for blue marlin, 1.1 MT for white marlin, and 0.08 MT for sailfish. The estimates for 2004 were 15 MT, 0.8 MT, and 0.08 MT, respectively, for the three species

In addition to restrictions on U.S. recreational harvest, the Management Plan also imposed regulations on commercial fisheries by prohibiting retention and sale of the three species at U.S. ports. For this reason, no U.S. commercial landings were reported for any of the three Atlantic species. However, estimates of by-catch mortality in the U.S. longline fleet are made using the data from mandatory pelagic logbooks and scientific observer data collected on this fleet. The procedure for estimating the historical by-catch of blue marlin, white marlin, and sailfish was detailed in SCRS/96/97-Revised. This procedure was implemented for estimating by-catch mortalities from the U.S. longline fleet. Revisions to historical landings of billfish previously reported to ICCAT were based on review of the estimates conducted at the 1996 ICCAT Billfish Workshop held in Miami, FL (USA). Estimates of the billfish bycatch discarded dead in the U.S. commercial longline and other commercial fisheries for 2006 were 35 MT for blue marlin, 9 MT for white marlin, and 5 MT for sailfish. The estimated 2005 U.S. discarded dead bycatch was 34 MT, 22 MT, and 11 MT, respectively for the three species.

2.1.6 Shark Fishery Statistics

The U.S. Federal Fisheries Management Plan (FMP) implemented in 1993 (NMFS 1993) identified three management groups: large coastal sharks, small coastal sharks, and pelagic sharks. The pelagic complex included ten species: shortfin mako (*Isurus oxyrinchus*), longfin mako *(Isurus paucus*), porbeagle (*Lamna nasus*), thresher (*Alopias vulpinus*), bigeye thresher (*Alopias superciliosus*), blue (*Prionace glauca*), oceanic whitetip (*Carcharhinus longimanus*), sevengill (*Heptranchias perlo*), sixgill (*Hexanchus griseus*), and bigeye sixgill (*Hexanchus vitulus*). The 1993 FMP classified the status of pelagic sharks as unknown because no stock assessment had been conducted for this complex. The Maximum Sustainable Yield (MSY) for pelagic sharks was set at 1,560 MT dressed weight (dw), which was the 1986-1991 commercial landings average for this group. In 1997, as a result of indications that the abundance of Atlantic sharks had declined, commercial quotas for large coastal, small coastal, and pelagic sharks were reduced. The quota for pelagic sharks was set at 580 MT. In 1999, the U.S. FMP for Atlantic Tunas, Swordfish, and Sharks (NMFS 1999) proposed the following measures affecting pelagic sharks: 1) a reduction in the recreational bag limit to 1 Atlantic shark per vessel per trip, with a minimum size of 137 cm fork length for all sharks, 2) an increase in the annual commercial quota for pelagic sharks to 853 MT dw, apportioned between porbeagle (92 MT), blue sharks (273 MT dw), and other pelagic sharks (488 MT dw), with the pelagic shark quota being reduced by any overharvest in the blue shark quota, and 3) making the bigeye sixgill, sixgill, sevengill, bigeye thresher, and longfin mako sharks prohibited species that cannot be retained. Regulations on prohibited species went into effect in 2000, whereas those on pelagic shark quotas were enacted in 2001. Presently, the commercial quotas for pelagic sharks (and other species groups) are split equally between three trimester seasons.

Landings of sharks by U.S. longline fishermen holding permits to land and sell swordfish caught in the Atlantic and dead discards of sharks in the US longline fleet targeting tunas and tuna-like species are monitored and reported to ICCAT. There are also additional catches and landings of Atlantic pelagic sharks across the range of US fleets that harvest them, including recreational fisheries, that are updated annually. These total catches are updated herein through 2006 (data for 2006 are preliminary and subject to change). Commercial landings of pelagic sharks in weight steadily increased from the early 1980s, peaked in 2004, and declined in 2005 and 2006, although the data for 2006 are preliminary (Appendix Table 2.6a-SHK). Recreational landings in numbers estimated from the MRFSS survey during 1981-2006 peaked to a maximum of 93,000 fish in 1985, and showed a declining trend since that year, fluctuating between about 42,600 fish in 1986 to about 3,800 fish in 2001. There was a peak in the latest year of data, 2006, mostly the result of an unusually high estimate for thresher sharks (Appendix Table 2.6a-SHK). Pelagic longline dead discards also fluctuated between 1987 and 2006, but generally declined from a maximum of

30,500 fish in 1993 to a minimum of about 2,600 fish in 2005. Total catches ranged from about 12,600 fish in 1981 (no commercial landings or discard estimates were available for that year) to about 95,000 fish in 1985, as a result of the peak in recreational landings that year.

Blue shark (*Prionace glauca*) commercial landings were generally very low (Appendix Table 2.6b-SHK). Recreational landings in numbers ranged from 0 fish in several years to over 20,000 fish in 1987. Pelagic longline discards reached 29,000 fish in 1993, but otherwise oscillated between a minimum of about 1,400 fish in 2005 to a maximum of about 19,000 fish in 1996. In general, there was a decreasing trend in dead discards of blue sharks (Appendix Table 2.6b-SHK). The trends in recreational landings and dead discards were very similar from 1992 to 1997. Total catches ranged from 0 fish in 1982 (a year in which no commercial or recreational landings were reported) to about 43,500 fish in 1993, the year in which dead discard estimates peaked (Appendix Table 2.6b-SHK).

Shortfin mako (*Isurus oxyrinchus*) commercial landings never exceeded 11,000 fish according to available estimates and assumptions about average weights (Appendix Table 2.6c-SHK). Most of the landings were attributable to the recreational fishery, whose landings in numbers peaked in 1985 to about 80,000 fish, and ranged from less than 1,400 fish to over 31,000 fish in the remaining years. Pelagic longline discards of shortfin makos were negligible since the meat of this species is highly valued. Total catches ranged from about 6,000 fish in 1999 to almost 82,000 fish in 1985, when recreational catches peaked (Appendix Table 2.6c-SHK).

Catches of other pelagic species, such as longfin mako (*Isurus paucus*), oceanic whitetip shark (*Carcharhinus longimanus*), porbeagle (*Lamna nasus*), bigeye thresher (*Alopias superciliosus*), and thresher shark (*Alopias vulpinus*) were very small. Total catches of thresher sharks peaked at about 5,300 fish in 1984 and 1999, and then showed a high peak in the latest year of data, 2006, as a result of an unusually high estimate of recreationally caught thresher sharks. A maximum of about 1,500 fish was estimated to have been landed by the commercial fishery in 1997, the maximum estimate of dead discards from the pelagic longline fishery was about 700 fish in 1989, and no dead discards were reported for 1998-2006. Total catches of longfin makos in any given year were under 450 fish. Very few longfin makos were landed by the commercial fishery, there were no reported landings from recreational fisheries, and only some fish were reported discarded dead from 1992 to 1995. Very few oceanic whitetip sharks were landed by the commercial fishery, except for two peaks of about 1,250 and 1,800 fish in 1983 and 1998, respectively, but otherwise total catches never exceeded 450 fish. Total reported catches of porbeagle, and especially bigeye thresher, were also very low.

2.2. Research Activities

2.2.1 Bluefin Tuna Research

As part of its commitment to the Bluefin Program, research supported by the United States has concentrated on ichthyoplankton sampling, reproductive biology, methods to evaluate hypotheses about movement patterns, spawning area fidelity, stock structure investigations and population modeling analyses.

Ichthyoplankton surveys in the Gulf of Mexico during the bluefin spawning season were continued in 2006 and 2007. Data resulting from these surveys, which began in 1977, are used to develop a fishery-independent abundance index of spawning West Atlantic bluefin tuna. This index has continued to provide one measure of bluefin abundance that is used in SCRS assessments of the status of the resource (SCRS/2006/082).

Scientists from the Virginia Institute of Marine Science are investigating the stock composition of small bluefin tuna caught off the northeastern U.S. and larger bluefin caught in the Gulf of Mexico and off Canada. Genetic markers derived from young of the year bluefin caught in the Mediterranean Sea and the Gulf of Mexico are being used to assign origin.

Scientists from Texas A & M University and the University of Maryland continue to study the stock structure of bluefin tuna using otolith chemistry particularly focusing on large bluefin from the Gulf of Mexico and the Mediterranean Sea. This research is greatly facilitated through continued collaboration with European scientists.

Scientists from the University of Maryland continue to study the ageing of bluefin tuna particularly for large bluefin from the Gulf of Mexico. Part of this research is conducted with colleagues from Canada.

Scientists at the University of Miami are studying the feasibility of determining bluefin gender from chromosomal material and are studying the use of reproductive hormones to determine participation in spawning.

The Block laboratory of Stanford University and the TAG-A-Giant research team continued to deploy electronic tags in the western Atlantic in 2006 and 2007 (n=32 deployments). These efforts brought the total number of electronic tags deployed on Atlantic bluefin by the TAG team to nearly 1000. Research in the Gulf of Mexico provided oceanographic analyses of the western spawning grounds identified from electronic tags and catch data. The results indicate significant correlations of environmental data indicative of occupancy of cyclonic eddies during the spawning period in the Gulf of Mexico. Research has also focused on genetic analyses of electronic tagged fish. Using nuclear markers confirmed the 2006 SCRS report indicating fish that show (via electronic tags) fidelity to Gulf of Mexico spawning grounds are genetically unique from western tagged bluefin tuna that move into the western Mediterranean to spawn (Boustany et al. 2006).

Researchers at the University of British Columbia continue work with TAG scientists and the National Marine Fisheries Service to develop methods to estimate bluefin movement and fishing mortality rate patterns. National Marine Fisheries Service scientists also continue to collaborate with ICCAT scientists from several nations to develop operating models (which will use conventional and electronic tagging data and fishing effort by management area) to evaluate possible harvest control rules management procedures.

Researchers at the University of New Hampshire’s Large Pelagic research lab continue to engage in ecological analyses seeking to identify the underlying dynamics of Atlantic bluefin migration, reproduction, age and growth, and forage relationships. In 2006-2007, the LPRC-DFO electronic tagging program included release (so far) of over 34 PSAT tags on giant bluefin in Canadian waters, and continuation of the Tag a Tiny juvenile tagging program. In 2007, over 25 miniature psats, or X-tags, were deployed on juvenile bluefin in the New England region, and implanted archival tagging of school bluefin continues. A study is also underway on shifts in oceanographic regimes and possible impacts on bluefin tuna and their prey.

Research was also recently completed by the National Marine Fisheries Service on the consumption of Atlantic herring by bluefin tuna in the Gulf of Maine-Georges Bank (Overholtz 2006).

From late April through mid June 2007, the National Marine Fisheries Service conducted extensive observations of the pelagic longline fishery in the Gulf of Mexico. Roughly 70% of known fishing trips and a higher percentage of total effort was observed. During that sampling more than 2,000 yellowfin, about 1,600 swordfish, 150 bluefin, about 130 shortfin mako and 11 bigeye were observed. Twenty six of the bluefin were landed, 75 were released alive, 41 were released dead and 8 broke off. Various tissues were taken from the bluefin including otoliths, gonads and muscle. Contracts were awarded to conduct research on bluefin stock structure, growth, gender determination and reproduction.

2.2.2 Swordfish Research

Data from observer samples were compared against self-reported information from the U.S. large pelagic mandatory logbook reporting system, and estimates of discard mortality of swordfish, billfish, sharks and other species from the U.S. fleet were developed. Fisher reported and observed swordfish catch, size and catch rate patterns through 2006 were examined in support of monitoring the recovery of north Atlantic swordfish and a pilot study to be conducted in closed areas during the coming year. Standardized indices of abundance were updated through 2006 for the Western North Atlantic using data from the U.S. pelagic longline fleet. Collaborative research with Venezuelan scientists continues on estimating the age-structure of the catch of swordfish. Results of this research will be available for the next assessment of north Atlantic swordfish. U.S. scientists collaborated with Brazilian scientists in conduct of catch rate standardization procedures by offering a course on the topic in Brazil in mid-2006. Central to this collaboration is development of fisheries research capacity in Brazil through graduate student training and of stronger scientific cooperation between Brazil and the United States. Research on measures to mitigate the interactions between pelagic longline and bycatch of marine turtles continued under a cooperative research program involving the U.S. Atlantic pelagic longline fishery.

2.2.3 *Tropical Tunas Research*

U.S. scientists participated in the ICCAT SCRS Inter-Sessional Meeting of the Tropical Species Group, held in Sète, France, April 24-28, 2006. Participants continued the recent work of the Group in evaluating alternative measures to protect juvenile tropical tunas.

U.S. scientists from the University of Miami's Rosenstiel School of Marine and Atmospheric Science collaborated with EC scientists on the EU-funded FEMS project, on management strategy evaluations related to tropical tuna fisheries. U.S. scientists have continued to conduct cooperative research with scientists from Mexico using combined longline observer data from the Gulf of Mexico, pursuing the development of indices of abundance for species of concern to ICCAT as well as descriptive analyses of that fishery.

U.S. scientists, in collaboration with French fisheries researchers from the Institut de Recherche pour le Developpment (IRD) in Brest, France, conducted two studies on aspects of the life history of Atlantic yellowfin tuna. The first research effort was the development of an age and growth curve developed based on directly estimated ages using daily increments in sagittal otoliths. The strengths of this data include not only highly robust estimates of age, but also estimates from the full size range of these fish - large fish (maximum sample size of 179cm FL) as well as a early juvenile fish obtained from the stomach contents of larger yellowfin (5.2 to 8.4cm FL). It is believed that in particular the latter data is the first of its kind to be applied to such a study. Because of the improved resolution of this curve over previous equations, application to stock assessments may result in more accurate biological parameters for use in management. The second research effort was a proof of concept study on the use of microchemistry in juvenile otoliths to assess their utility in developing elemental fingerprints specific to natal origin of yellowfin tuna in the Atlantic Ocean. Results indicate that discrete elemental fingerprints do exist among juveniles from distinct geographic spawning grounds. Application of such information to broader studies including adults distributed throughout the Atlantic may contribute to the understanding of relative contribution of putative spawning zones to the oceanic population as well as help to define movement, migration, and distribution patterns.

In 2007, U.S. scientists have presented several papers to the SCRS concerning indices of abundance and length-frequencies of yellowfin tuna, bigeye tuna, and skipjack.

2.2.4 *Albacore Research*

An important research directive from the Methods working group has been to develop alternative, more detailed statistical-based models, in efforts to evaluate more fully the relationship between this species' population dynamics and associated fishery operations (i.e., areas of uncertainty in an overall stock assessment). To this end, U.S. National Marine Fisheries Service scientists have collaborated with other SCRS scientists (as members of the Albacore stock assessment working group) to help implement the MULTIFAN-CL model. A U.S. scientist has also implemented an alternative age-structured model known as CASAL.

2.2.5 *Mackerels and Small Tunas Research*

Scientist from the University of West Florida, University of South Alabama and the National Marine Fisheries Service have recently collaborated on the use of otolith shape to distinguish stocks of king mackerel, *Scomberomorus cavalla*. Results indicated that the current practice of assigning all winter mixing zone landings to the Gulf Stock does not reflect real mixing conditions.

2.2.6. *Shark Research*

The ICCAT Shark Species Group conducted a data preparatory meeting for assessment of blue sharks and shortfin makos in Punta del Este, Uruguay, in June 2007. Scientists from the U.S. delegation contributed 4 working documents for this meeting on catches and indices of relative abundance of pelagic sharks and acted as rapporteurs for several sections of the meeting report. A cooperative shark research project between Brazil (Universidade Federal Rural de Pernambuco) and the U.S. (NOAA Fisheries and the University of Florida's Florida Museum of Natural History) has been initiated. The main goal of this cooperative project is to conduct simultaneous research on pelagic sharks in the North and South Atlantic Ocean. Central to conducting the research is development of fisheries research capacity in Brazil through graduate student training and of stronger scientific cooperation between Brazil and the U.S. Electronic equipment (hook-timer recorders and temperature and depth recorders [TDRs]) will be sent from the U.S. to Brazil for deployment aboard commercial longline fishing vessels to investigate preferential feeding times of pelagic sharks and associated fishing depths and temperatures for potential use in habitat-based models and estimation of catchability. Two pop-off satellite archival tags have also been deployed to date (on an oceanic whitetip shark and a longfin mako) in U.S. Atlantic waters.

2.2.7. Billfish Research

The NMFS SEFSC again played a substantial role in the ICCAT Enhanced Research Program for Billfish in 2006, with SEFSC scientists acting as general coordinator and coordinator for the western Atlantic Ocean. Major accomplishments in the western Atlantic in 2006 were documented in SCRS/06/158. Highlights include 11 at-sea sampling with observers on Venezuelan industrial longline vessels through September 2006. Of the trips accomplished, 3 observer trips were on Korean type vessels fishing under the Venezuelan flag. Most of these vessels are based out of Cumana targeting tuna, swordfish, or both at the same time. Biological sampling of swordfish, Istiophorids, and yellowfin tuna for reproductive and age determination studies, as well as genetics research were continued during the 2006 sampling season. These included 1,105 blue marlin, 147 white marlin, 1,501 sailfish, and 201 swordfish. Shore-based sampling of billfish landings for size frequency data, as well as tournament sampling was obtained from Venezuela, Grenada, U.S. Virgin Islands, Bermuda, Barbados, and Turks and Caicos Islands. Program participants in Venezuela, Grenada, and Barbados continued to assist in obtaining information on tag-recaptured billfish, as well as numerous sharks, in the western Atlantic Ocean during 2006; a total of 97 tag recovered billfish and sharks were submitted to the Program Coordinator in 2006. Age, growth, and reproductive samples (Bermuda) from several very large billfish were obtained during 2006.

A study was initiated by the Virginia Institute of Marine Science (VIMS) on U.S. longline vessels in late 2006 to evaluate post release survival of sailfish in the western Atlantic Ocean. In addition, SEFSC continues to conduct pelagic longline research to evaluate gear behavior, and the effects of gear modification on catch rate and survival of target and non-target species. The first of a series of peer review papers on this topic will be available in the fall, 2007. The SEFSC also finalized PSAT research of sailfish and blue marlin in the eastern and western north Atlantic during 2006. Preliminary results of this work will be presented to a international symposium on the use of electronic tags to monitor the movements of marine species in San Sebastian, Spain, in the fall of 2007.

The cooperative billfish research between U.S. and Brazilian scientists that was initiated in 2005 continued in 2006 and 2007. Additional research in Brazil will also focus on PSAT tagging of billfish and the collection of biological materials for ageing and molecular genetic analyses. The Fishery Management Group of the University of Miami is carrying out research on Atlantic billfish in three areas, population parameter estimation, population modeling and development of socio-economic indicators. Others at the University of Miami's Rosenstiel School and elsewhere are conducting research on early life history, reproductive biology and ecology of billfishes, as well as age and growth estimation.

The proceedings of the fourth International Billfish Symposium, which was held in Catalina Island October 31-November 3, 2005, was published in the fall of 2006. The SEFSC Migratory Fishery Biology Branch staff and associated collaborators presented 12 of the 70 papers (and 2 posters) during the meeting. This effort represented about 17% of the papers presented during the entire program and reflects, in a positive way, progress of research on Atlantic billfish.

2.2.8 Seabird research

The University of Washington Sea Grant Program is developing a streamer line system for application to world high-seas pelagic longline fisheries as the cornerstone of seabird bycatch mitigation in these extensive, multi-national fisheries targeting tuna and billfish worldwide. The design will focus on: 1) engineering widely applicable and easy to use deployment, retrieval and rigging systems, as well as towed devices that minimize the fouling of streamer lines on gear to maximize practical application by crews; and 2) identifying optimal streamer line materials, configuration, and performance standards that minimize seabird attacks on baited hooks. Testing will entail measuring the behavioral response of "worst case" seabirds to alternative designs in "worst case" locations in cooperation with partner scientists and organizations. Research results will be directly applicable to ICCAT's implementation of its seabird resolution (02-14).

2.2.9 Tagging

Participants in the Southeast Fisheries Science Center's Cooperative Tagging Center (CTC) and the Billfish Foundation Tagging Program (TBF) tagged and released 5,887 billfishes (including swordfish) and 238 tunas in 2006. This represents an increase of 43.4% for billfish and a decrease of 27.7% for tunas from 2005 levels. There continues to be several electronic tagging studies involving bluefin tuna and billfish in the Atlantic Ocean and adjacent waters during 2006. These are discussed in the bluefin and billfish research sections above. There were 39 billfish recaptures from the CTC and TBF projects in 2006. This represents an increase of 30.8% from 2005. These recaptures were one blue marlin, 26 sailfish, two white marlin and ten swordfish. A total of 18 tunas were recorded as recaptures in 2006. These were 14 bluefin, and four yellowfin. This recapture level was an increase of 38.9% from the 2005 values. The ICCAT Enhanced Research Program for Billfish (IERPBF) in the western Atlantic Ocean has continued to assist in reporting tag recaptures to improve the quantity and quality of tag recapture reports, particularly from Venezuela, Barbados, and Grenada.

2.2.10 Fishery Observer Deployments

Domestic Longline Observer Coverage. In accordance with ICCAT recommendations, randomized observer sampling of the U.S. large pelagic longline fleet was continued into 2006 (see Appendix Figure 2.2-Observers). Representative scientific observer sampling of this fleet has been underway since 1992. The data collected through this program have been used to quantify the composition, disposition, and quantity of the total catch (both retained and discarded at sea) by this fleet which fishes in waters of the northwest Atlantic Ocean, Gulf of Mexico, and the Caribbean Sea. Selection of the vessels is based on a random, 8% sampling of the number of sets reported by the longline fleet. A total of 9,047 sets (6,701,427 hooks) were recorded by observer personnel from the SEFSC and NEFSC programs from May of 1992 to December of 2006. Observers recorded over 331,293 fish (primarily swordfish, tunas, and sharks), in addition to marine mammals, turtles, and seabirds during this time period. The percent of fleet coverage through 2006 ranged from 2.5% in 1992 to 9.0% in 2002. Fleet effort for 2006 has not been finalized, but percent observer coverage is estimated near 8% for the year. Sampling fraction of the U.S. pelagic longline fleet was increased in 2002 to 8%. Document SCRS/04/168 provides a more detailed summary of the data resulting from observer sampling between 1992 and 2002. Data collected by the SEFSC, Miami Laboratory Pelagic Observer Program is available on the internet at http://www.sefsc.noaa.gov/observerdata.jsp for the years 1992 to 2005.

Southeast U.S. Shark Gillnet Fishery Observer Coverage.

The directed shark gillnet fishery operates year round in coastal waters off the US southeast coast. Sharks are the primary target species but at times other species are targeted within the same trip. On-board observers have conducted observations of this fishery from 1993-1995 and 1998-present and reports of the catch and bycatch from these observations are available. All vessels that have an active directed shark permit and fish with gillnet gear are selected for coverage. A total of 4 drift, 79 strike and 161 sink gillnet sets were observed on 4, 29 and 42 trips in 2006, respectively. Trips targeted primarily sharks but trips targeting mackerel, kingfish, and multiple teleost species were also observed. Depending on gear and target, total observed catch composition varied from 77-99% shark, 1-20% teleosts and 1-3% batoids.

U.S. Shark Bottom Longline Observer Coverage

The shark bottom longline fishery is active in the Atlantic Ocean from about the Mid-Atlantic Bight to south Florida and throughout the Gulf of Mexico. The bottom longline gear targets large coastal sharks, but small coastal sharks, pelagic sharks, and dogfish species are also caught.

Observations of the Atlantic shark directed bottom longline fishery have been conducted since 1994 by the Commercial Shark Fishery Observer Program, Florida Museum of Natural History, University of Florida, Gainesville, FL. Starting with the 2nd trimester season of 2005, responsibility for the fishery observer program was transferred to National Marine Fisheries Service, Southeast Fisheries Science Center, Panama City Laboratory. All vessels that have an active directed shark permit and fish with bottom longline gear are selected for coverage. Consequently, observers also board trips that target a combination of shark and grouper, and shark and tilefish. In 2006, observers spent 148 days at sea on 49 trips. Observers monitored 26 vessels and recorded information for 117 sets. The observed bottom longline catch and bycatch for sets targeting shark consisted of 19 species of sharks, 12 species of teleosts, 3 species of batoids.

Part II

Section 3: U.S. Implementation of ICCAT Conservation and Management Measures

3.1 Catch Limits and Minimum Sizes

Program for West Atlantic Bluefin Tuna (Rec 98-7; 02-7; Rec. 06-06)
Recommendation 02-07 revised the annual WBFT quota for the United States to 1,489.6 MT and allocated 25 MT of this total to account for incidental catch by pelagic longline vessels in the vicinity of the management area boundary. This quota and the 2005 underharvest were applied to the 2006 fishing year (1 June 2006 through 31 May 2007) resulting in an adjusted quota of 2,839.2 MT. During the 2006 calendar year, the United States landed an estimated 558.9 MT of Atlantic bluefin tuna, which includes an estimated 91.3 MT of dead discards. Recommendation 06-06 revised the annual WBFT quota for the United States to 1,190.12, including the 25 MT to account for bycatch related to directed longline fisheries in the vicinity of the management area boundary. Recommendation 06-06 also limits the amount of underharvest that is carried forward to the next year, i.e., not to exceed 50 percent of a Contracting Party's current initial Total Allowable Catch. Application of the recommendation resulted in an adjusted quota of 1,629.2 MT for the 2007 fishing year. The United States is currently transitioning from a June 1 – May 31 fishing year management cycle to a calendar year management cycle in 2007.

Multi-Annual Recovery Plan for Bluefin Tuna in the Eastern Atlantic and Mediterranean (06-05)
The United States has implemented the ICCAT Bluefin statistical document program and will continue to monitor those documents for their validity, including as it relates to farmed product.

Recommendation to Establish a Plan to Rebuild Blue Marlin and White Marlin Populations (Rec 06-09)

Phase I of the ICCAT rebuilding plan requires countries to reduce commercial landings of Atlantic white marlin captured in pelagic longline and purse seine fisheries by 67 percent and reduce blue marlin landings by 50 percent from 1996 or 1999 landings (whichever is greater) through 2010. The United States has prohibited all commercial retention of billfish since 1988. For its part of the rebuilding program, the United States agreed to maintain regulations that prohibit all landings of marlins by U.S. pelagic longline fishermen, and to continue 10% scientific observer coverage levels of billfish tournaments through 2010. The United States currently meets or exceeds these observer requirements. The United States limits annual landings by U.S. recreational fishermen to 250 Atlantic blue and white marlins, combined; requires permits for HMS recreational vessels; and has tournament registration and reporting requirements. Catch and release rates in the U.S. recreational fishery for Atlantic marlin are estimated to be very high (90 – 99%) based on tournament data, and minimum sizes have been established at 168 cm (66 inches) for white marlin and 251 cm (99 inches) for blue marlin.

In addition, beginning January 1, 2008, all anglers participating in Atlantic billfish tournaments will be required to use only non-offset circle hooks when deploying natural baits or natural bait/artificial lure combinations. These management measures are expected to substantially reduce marlin mortality. As noted in section 2.1.4 Marlins and Sailfish Fishery Statistics of this report, the United States is working to resolve uncertainty pertaining to estimation methodologies for rod and reel catches and landings of marlins. Preliminary 2007 calendar year data indicate landings of 32 blue marlin and 17 white marlin from recreational fishing activities. Preliminary 2006 calendar year data from all data sources indicate landings of 64 blue marlin and 66 white marlin from recreational fishing activities. Please refer to the U.S. Compliance Table for final aggregate U.S. landings.

The United States implemented a mandatory reporting program for billfish landed by recreational anglers who are not participating in registered tournaments in March 2003. In addition, the United States has taken steps to improve statistical information collection on recreational fishing in the Commonwealth of Puerto Rico and the U.S. Virgin Islands. These efforts have resulted in qualitative information that indicates that billfish landings may have been underestimated in past years. Efforts to produce quantitative historical estimates of non-tournament billfish landings for both U.S. mainland and Caribbean ports have been problematic due to estimation techniques that are subject to imprecision and bias. To increase the accuracy of landing estimates, the United States has worked to improve data collection in Puerto Rico, and to increase enforcement activities in response to reports of illegal sales, unregistered tournaments, and fishing by non-permitted anglers. This effort resulted in the registration of all identifiable tournaments in Puerto Rico during 2006.

Recommendation to Establish a Rebuilding Program for North Atlantic Swordfish (Rec 06-02)
Recommendation 06-02 established a catch limit of 3,907 MT ww for the United States for 2007 and 2008, and included a provision allowing up to 200 MT of U.S. North Atlantic swordfish quota to be caught between 5 degrees North latitude and 5 degrees South latitude, and a provision to transfer 25 MT to Canada. The recommendation also limited carryover of unused quota to 50 percent of the original quota. The United States is providing 1,345 MT of unused quota each year for 2007 and 2008 from the 2003 – 2006 management period for use by developing states. Starting January 1, 2008, the United States will manage NSWO and SSWO on a calendar year management cycle. During the 2005 fishing year (June 1, 2005 – May 31, 2006), there was an underage that was added to the landings quota for the 2006 fishing year. Landings and discard estimates for the 2005 fishing year and 2006 calendar years are provided in the U.S. Compliance tables. The United States has a minimum size of 33 lb (15 kg) dressed weight, and a required minimum size of 29" (73 cm) cleithrum to caudal keel length or 47" (119 cm) lower jaw fork length, which are designed to correspond to the 119 cm minimum size limit, with zero tolerance. Information on compliance with the minimum size is provided in the U.S. compliance tables. The United States codified 2007 and 2008 swordfish quotas, as identified in paragraph 3 c) Rec 06-02, in the fall of 2007.

Recommendation on South Atlantic Swordfish (06-03)
This recommendation establishes catch allocations for the United States of 100 MT ww each year for the period 2007 – 2009, inclusive, and allowed up to 100 MT ww of underharvest to be carried forward by the United States each of these years. The United States landed 0.0 MT of South Atlantic swordfish in 2005. Landings for 2006 are provided in the compliance tables.

Recommendation on Revision and Sharing of the Southern Albacore Catch Limit (02-06; 03-07; 04-04)
The United States was subject to a catch limit of 100 MT in 2006; however, the United States does not have a directed fishery for southern albacore. Estimated U.S. landings of southern albacore tuna were 0.0 MT in calendar year 2005 and landings for the 2006 calendar year are provided in the U.S. Compliance tables.

Recommendation on North Atlantic Albacore Catch Limits (02-05; 03-06; 06-04)
The United States was allocated a landings quota of 607 MT ww for 2006, which is a level consistent with average landings for the United States during the mid-1990s. The 2002 recommendation applied for only one year, and the 2003 recommendation, which applied to three fishing years (2004-2006), was extended to cover 2007 by Recommendation 06-04. The recommendation provides that overages/underages of annual catch limits should be deducted from, or added to, specific future catch limits. The United States landed 487.3 MT during the 2005 calendar year. The 2006 calendar year landings are given in the U.S. Compliance tables.

In addition, pursuant to ICCAT's recommendation concerning the limitation of fishing capacity on North Atlantic albacore (1998), the United States submits the required reports providing a list of U.S. vessels operating in the fishery on an annual basis. The 2007 submission indicated that there were 262 vessels authorized to harvest North Atlantic albacore in the convention area.

Recommendation on Bigeye Tuna Conservation Measures (02-01; 03-01; 04-01)
No catch limits apply to the United States, since 1999 catch was less than 2,100 MT. The United States has implemented a higher minimum size than that required by ICCAT, which provides additional protection for juvenile bigeye. This minimum size of 27 inches (approximately 6.8 kg) applies to all U.S. fisheries landing bigeye tuna, both commercial and recreational. The United States landed 483.4 MT in calendar year 2005, and 2006 calendar year landings are given in the U.S. Compliance tables.

Recommendation on Yellowfin Size Limit (72-01; 05-01)
In 2005, ICCAT repealed the minimum size limit of 3.2 kg that had been in place since 1972. The United States maintains a minimum size limit of 27 inches fork length (approximately 6.8 kg) in both recreational and commercial fisheries for yellowfin tuna.

Resolution on Atlantic Sharks (01-1; 03-10)
The 2001 shark resolution calls for the submission of catch and effort data for porbeagle, shortfin mako, and blue sharks; encourages the release of live sharks to the extent possible; encourages the minimization of waste and discards in accordance with the Code of Conduct for Responsible Fisheries; and calls for voluntary agreements not to increase fishing targeting Atlantic porbeagle, shortfin mako, and blue sharks until an assessment can be conducted. Furthermore, the 2003 shark resolution requests ICCAT parties and cooperating parties, in preparation for the 2004 shark assessment, to provide the SCRS bycatch committee with information on shark catches, effort by gear type, and landings and trade of shark products, and calls for the full implementation of National Plans of Action (NPOAs) by ICCAT parties and cooperating parties, in accordance with the Food and Agriculture Organization's (FAO) International Plan of Action (IPOA) for the Conservation and Management of Sharks.

The United States submits catch and effort data for sharks and has catch limits in place for pelagic sharks, including, Atlantic porbeagle, shortfin mako, and blue sharks. U.S. scientists provided data to the SCRS for the 2004 shark assessment, and participated in the shark assessment meeting.

In 2002, pursuant to the 2000 Shark Finning Prohibition Act, the United States banned the practice of finning nationwide (67 FR 6194, February 11, 2002), to reduce discards and waste associated with finning. Additionally, the United States adopted a National Plan of Action for the Conservation and Management of Sharks in February 2001, consistent with the International Plan of Action for Sharks, which calls for management measures to reduce waste to the extent practicable and to protect vulnerable life history stages, such as juveniles.

The United States has managed sharks in the Atlantic Ocean under domestic fishery management plans (FMP) since 1993. The 1993 FMP, among other things, established a fishery management unit for Atlantic sharks, prohibited shark finning by requiring that the ratio between wet fins/dressed carcass not exceed 5 percent, and established other commercial and recreational shark management measures. The 1999 Atlantic Highly Migratory Species FMP established further management measures for Atlantic sharks, including a limited access permit system, recreational retention limits, reduced commercial quotas, and expansion of the prohibited shark list to 19 species. In 2003, the United States again amended its shark management measures and addressed, among other issues, commercial quotas, quota management and administration, a time/area closure for sandbar and dusky shark nursery and pupping areas, and vessel monitoring system requirements for shark vessels to facilitate enforcement of closed areas.

A new Consolidated Fishery Management Plan (FMP) was completed in 2006, which among other actions, contained measures to enhance U.S. data collection efforts by improving identification of dressed shark carcasses. These measures prohibit removal of the 2^{nd} dorsal and anal fin from sharks prior to landing, and require all U.S. shark dealers to attend shark identification workshops.

To date, the United States has not conducted a stock assessment on porbeagle sharks. NMFS has reviewed the 2005 Canadian Stock Assessment and Recovery Assessment report on porbeagle sharks, which indicates that they are overfished and overfishing is not occurring. NMFS has deemed the Canadian Assessment to be the best available science and appropriate to use for U.S. domestic management purposes.

Recommendation by ICCAT (05-05) to Amend Recommendation 04-10 Concerning the Conservation of Sharks Caught in Association with Fisheries Managed By ICCAT (Rec 04-10;05-05; 06-10)
The original 2004 Recommendation established a timeline for review of the shortfin mako population assessment and development of recommendations for management alternatives (2005), as well as reassessment of blue sharks and shortfin mako (2007) by SCRS. Following the 2005 assessment, Recommendation 04-10 was amended to include additional requirements for CPCs to implement and report on measures taken to reduce fishing mortality of North Atlantic shortfin mako sharks. The United States currently tracks the annual quota for pelagic sharks, which includes landings of shortfin mako, to ensure that catches of these species are under the designated quota. Tracking of the pelagic shark quota in recent years indicates that pelagic sharks, including shortfin makos, do not constitute a significant portion of U.S. shark landings. The United States has catch limits in place for Atlantic porbeagle, shortfin

mako, and blue sharks and will continue to submit catch and effort data for sharks.

Recommendation 04-10 also included reporting requirements for shark catches, including available historical data on catches; full utilization of shark catches; a requirement that CPCs prevent their vessels from having shark fins onboard that total more than 5% of the weight of sharks; a requirement that the ratio of fin-to-body weight of sharks be reviewed by the SCRS by 2005; and prohibitions on fishing vessels retaining, transshipping or landing any fins harvested in contravention to the Recommendation. In addition, the Recommendation encourages the release of live sharks, especially juveniles in fisheries not directed at sharks, as well as additional research to improve the selectivity of fishing gears and identify shark nursery areas. Recommendation 05-05 required CPCs to implement the provisions of Recommendation 04-10 for North Atlantic shortfin mako shark populations. The United States continues to fulfill the requirements of these recommendations through data collection programs and a variety of fishery restrictions including the Shark Finning Prohibition Act of 2000. This law prohibited the practice of finning nationwide and the possession or landing of shark fins without the corresponding carcass (67 FR 6194, February 11, 2002). At present, NMFS is proposing an Amendment to the 2006 FMP which proposes to require fishermen to land sharks with all fins attached. Additionally, the United States adopted a National Plan of Action for the Conservation and Management of Sharks in February 2001, consistent with the International Plan of Action for Sharks, which calls for management measures to reduce waste to the extent practicable and to protect vulnerable life history stages, such as juveniles. The United States also currently enforces a minimum size limit and bag limits for recreationally caught sharks, commercial trip limits, and has established a time/area closure for shark bottom longline fishing in the mid-Atlantic to protect sharks in the nursery grounds. Recommendation 06-10 scheduled the next assessment for shortfin mako and blue sharks for 2008. The United States intends to participate in this assessment.

3.2 Closed Seasons

Recommendation on the Establishment of a Closed Area/Season for the Use of Fish-Aggregation Devices (Rec 99-3)
No U.S. action is necessary for this measure. The United States does not have any surface fleets fishing in the area covered by this recommendation.

Domestic Time/Area Closures for ICCAT Species
At present, the Atlantic pelagic longline fishery of the United States is subject to several discrete time/area closures that are designed to reduce bycatch in the pelagic longline fishery by prohibiting pelagic longline fishing for ICCAT species in those areas during specified times. These closures affect offshore fishing areas up to 200 nautical miles (nm) from shore (see Figure 1). Those closures are as follows: (1) Florida East Coast: 50,720 nm^2 year-round; (2) Charleston Bump: 49,090 nm^2 from February through April each year; (3) DeSoto Canyon: 32,860 nm^2 year-round; and (4) the Northeastern United States: 21,600 nm^2 during the month of June each year. Effective January 1, 2005, the United States implemented a Mid-Atlantic shark closed area for bottom longline gear from January through July of each year to protect dusky shark and juvenile sandbar sharks in pupping and nursery areas. In addition, all HMS gear types are prohibited year-round, except for surface trolling only from May through October, in the Madison Swanson and Steamboat Lumps Marine Reserves (Figure 2). These closures were implemented for the protection of spawning aggregations of gag grouper, and the HMS management measures will expire on June 16, 2010, consistent with Gulf of Mexico Fishery Management Council recommendations. Both of these reserves are located shoreward of the Desoto Canyon Closed Area (Figure 2). The Madison-Swanson Marine Reserve is 115 nm^2 in size, and the Steamboat Lumps marine reserve is 104 nm^2 in size. Additionally, on February 7, 2007, NMFS published a final rule (72 FR 5633) that complements regulations that the Caribbean Fishery Management Council (CFMC) implemented on October 28, 2005 (70 FR 62073), that closed six small distinct areas off of Puerto Rico and the U.S. Virgin Islands to bottom longline gear, year-round. The purpose of these closed areas is to protect essential fish habitat of reef-dwelling species. These areas are defined in Title 50, section 622.33 (a) of the Code of Federal Regulations. Finally, NMFS published a proposed rule on July 27, 2007 (72 FR 41392), to complement regulations being implemented by the South Atlantic Fishery Management Council (SAFMC). The SAFMC is finalizing Amendment 14A to the Snapper Grouper Fishery Management Plan. A final rule for Amendment 14A is currently being developed. In the final rule, the SAFMC will implement eight Type II MPAs from North Carolina to the Florida Keys. Type II MPAs are closures throughout the year to most gear types except some fishing, such as trolling for HMS and other coastal pelagic species. The SAFMC has requested NMFS to backstop these closures because of enforcement issues; many shark and snapper grouper fishermen possess the same permits and the gear is indistinguishable between the two fisheries. Therefore, NMFS is proposing to close the eight MPAs to shark bottom

longline gear. NMFS anticipates a final rule regarding these MPAs in early 2008.

The Northeast Distant Statistical Sampling Area (NED) (2,631,000 nm^2), which had been closed year-round (per regulations at 50 CFR part 223 and 635) from 2001 through mid-2004, has been reclassified as a gear restricted area. Pelagic longline vessels may only fish for highly migratory species in this area if they observe strict circle hook and bait restrictions and use approved sea turtle release gear in accordance with release and handling protocols. Outside of the NED, the U.S. HMS pelagic longline fishery is required to use circle hooks with certain bait combinations, depending on the region, as well as the required, approved sea turtle release gear and release and handling protocols. NMFS published a final rule on February 7, 2007 (72 FR 5633), that requires participants in the Atlantic shark bottom longline fishery to possess, maintain, and utilize the same equipment and follow the same protocols for the safe handling and release of sea turtles and other protected species as required in the pelagic longline fishery.

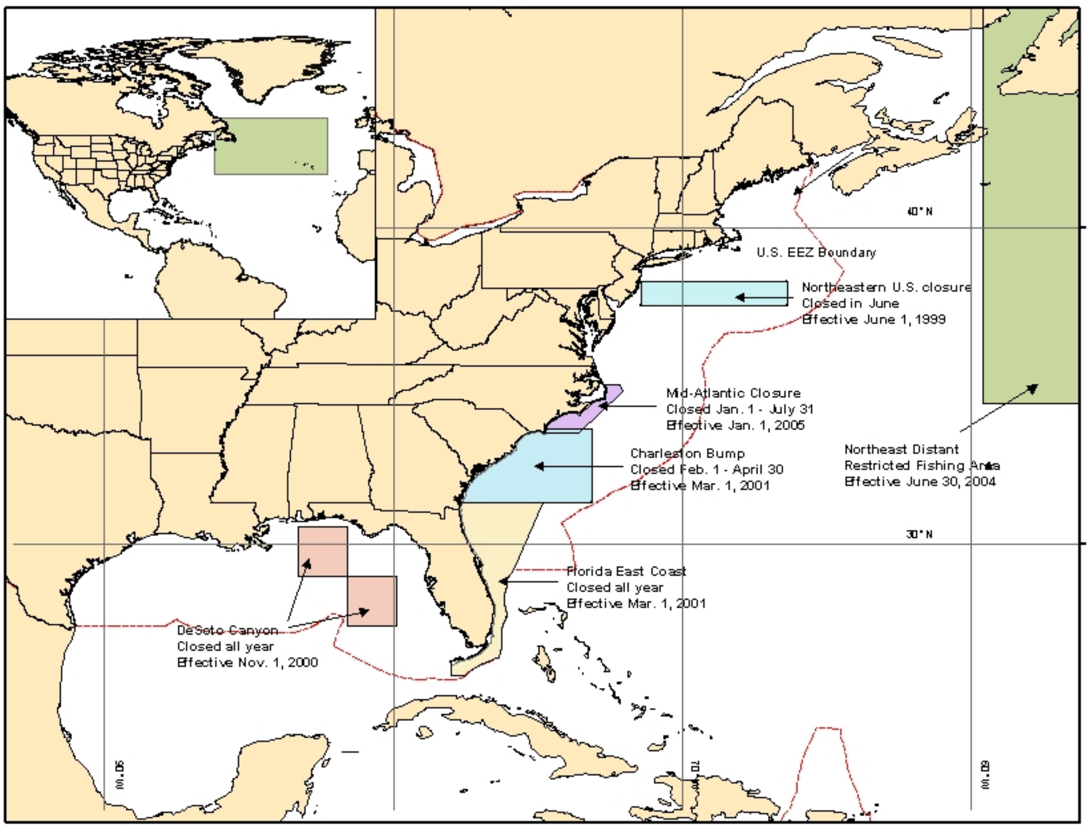


Figure 1. Existing U.S. time/area closures in HMS fisheries. Inset shows extent of the Northeast Distant restricted fishing area. All closures except the Mid-Atlantic are applicable to PLL gear only. The Mid-Atlantic Closure is applicable to bottom longline gear only. Note: the Northeast Distant (NED) was a closed area to all vessels as of 2001. It became the NED Restricted Fishing Area on June 30, 2004, when it was opened to those participating in the NED experiment. Madison-Swanson, Steamboat Lumps, and Caribbean bottom longline closures not included.

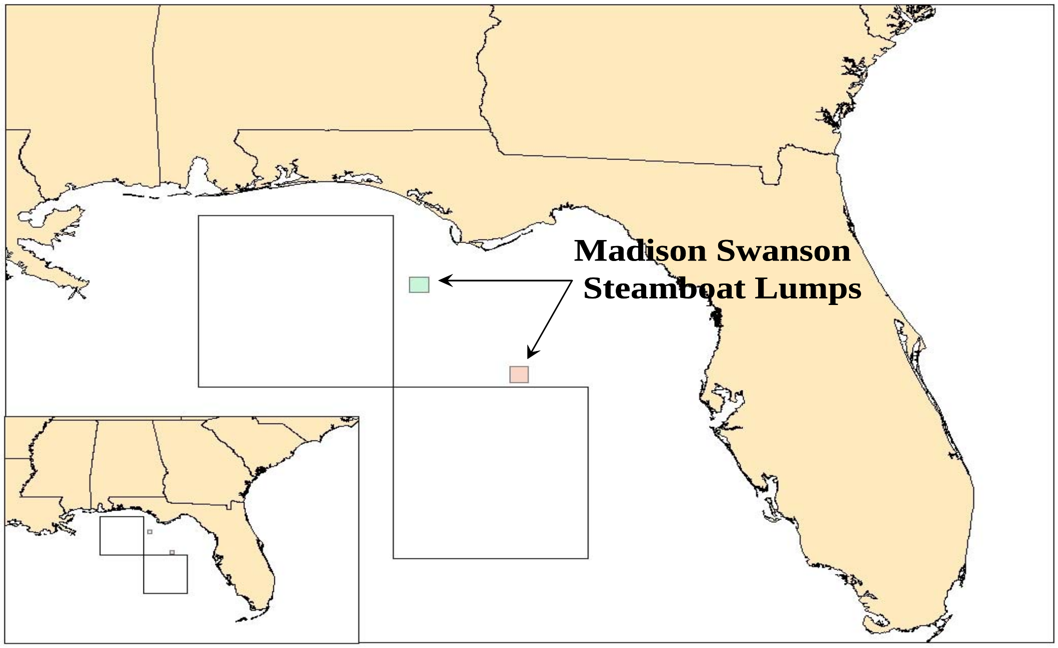


Figure 2. Madison-Swanson (upper left) and Steamboat Lumps (lower right) Marine Reserves. The Desoto Canyon closure is also shown for reference.

3.3 Ban on Imports

Trade Restrictive Recommendations (Rec 01-15, 02-16, 02-17, 02-18, 02-19, 02-20, 03-17, 03-18, 04-13, 04-14, and 04-15)
On December 6, 2004, the United States published a final rule (69 FR 70396) that implemented or lifted trade restrictions on several countries which were adopted at the 2001, 2002, and 2003 ICCAT meetings. Trade restrictions were implemented against bigeye tuna, bluefin tuna, and swordfish imports from Sierra Leone (02-19) and bigeye tuna imports from both Georgia (03-18) and Bolivia (02-17). This rule lifted trade restrictions on Honduras for bigeye tuna (02-18), bluefin tuna (01-15), and swordfish (01-15). Trade restrictions were also lifted against Belize for bluefin tuna (02-16), bigeye tuna (02-16), and swordfish (02-16) imports. Lastly, trade restrictions for bigeye tuna (02-20) imports from St. Vincent's and the Grenadines were also lifted. In 2005, the United States published a final rule on May 17, 2005 (70 FR 28218) that implemented recommendations 04-13, 04-14, and 04-15 to lift the trade restrictions on imported bigeye tuna (04-15) from Cambodia, bigeye and bluefin tuna from Equatorial Guinea (04-13), and bigeye tuna, bluefin tuna, and swordfish from Sierra Leone (04-14). There were no additional trade restrictive measures passed by the commission at the 2006 annual meeting.

Recommendation By ICCAT Concerning Trade Measures (06-13)
Recommendation 06-13 stipulates that CPCs that import tuna and tuna-like species products to collect relevant import, landings, or associated data on such products in order to allow for submission of that information to the ICCAT Secretariat. The United States collects relevant information through a combination of programs, including the bluefin, bigeye, and swordfish statistical document programs and through domestic Customs programs.

Statistical Documentation Programs
The U.S. Bluefin Tuna Statistical Document program has been in place since the 1990s, and statistical document programs for swordfish and frozen bigeye tuna were implemented in 2005. Prior to 2005, the United States had a domestic documentation program for swordfish called the Certificate of Eligibility (COE) which has now been fully replaced by the statistical document program. As required under the program, the United States submits reports to ICCAT twice-yearly, providing information on import, export and re-export activity involving these species products.

3.4 Observer Programs

The U.S. observer program currently meets two main objectives: monitoring of interactions between fishing gear and protected species (marine mammals, sea turtles, and to a lesser degree, sea birds), and monitoring of fishing effort and catch (estimation of total landings of target species and/or bycatch of non-target or prohibited species). An overview of observer programs in the United States can be found online at: http://www.st.nmfs.noaa.gov/st4/nop/index.html. Click on the bullets under "About US" for info about both the National Observer Program, which is a coordinating office for NMFS observer programs in our headquarters outside of Washington, DC, and the Regional Programs. Observers for U.S. vessels in ICCAT fisheries are deployed from Miami, Florida and Panama City, Florida. See Section 2.2.10 of this report for more information.

3.5 Vessel Monitoring

Recommendation Concerning Minimum Standards for the Establishment of a Vessel Monitoring System (VMS) in the ICCAT Convention Area (Rec 03-14, 04-11)
The United States implemented a fleet-wide VMS requirement in the Atlantic pelagic longline fishery effective September 1, 2003 (June 25, 2003, 68 FR 37772), consistent with the terms of recommendations 03-14 and 04-11. The United States is in compliance with these recommendations. In addition to what is required for these recommendations, the United States issued a rule in December of 2003 (December 24, 2003, 68 FR 74746), requiring VMS for bottom longline vessels operating near a time/area closure and for shark gillnet vessels operating during the right whale calving season. This rule was implemented in December 2003 for purposes of domestic Atlantic shark management.

3.6 Measures to Ensure Effectiveness of ICCAT Conservation and Management Measures and to Prohibit Illegal, Unreported and Unregulated Fishing

Management Standard for the Large-Scale Tuna Longline Fishery (Resolution 01-20) and Recommendation by ICCAT Concerning the Establishment of an ICCAT Record of Vessels over 24 Meters authorized to operate in the Convention Area (Rec 02-22)
In 2001, ICCAT resolved that minimum management standards should be established for issuance of fishing licenses to tuna longline vessels greater than 24 meters in overall length and that an annual report should be submitted to ICCAT using a specific format. As per Rec 02-22, the United States has submitted its list of vessels of more than 24m LOA that are licensed to fish for tuna and tuna-like species in the Convention Area, which includes licensed tuna longline vessels. The U.S. submission regarding Resol 01-20 is provided in the Appendix on page 20.

Recommendation by ICCAT Concerning the Duties of Contracting Parties and Cooperating Non-Contracting Parties, Entities, Fishing Entities in relation to their vessels in the ICCAT Convention Area (03-12)

The United States currently implements all elements of this measure. A list detailing the enforcement actions taken on ICCAT species is provided in the Appendix, page 18.

Recommendation to Establish a List of Vessels Presumed to Have Carried Out Illegal, Unreported, and Unregulated Fishing Activities (06-12)
The United States generally prohibits the landing of any foreign fishing vessels in its ports. Rulemaking to clarify domestic procedures for denying port access to vessels is ongoing and will be implemented in 2008.

Recommendation by ICCAT to Promote Compliance By Nationals of Contracting Parties, Cooperating Non-Contacting Parties, Entities, or Fishing Entities with ICCAT Conservation and Management Measures(06-14)
This recommendation requires CPCs to take appropriate measures in accordance with their applicable laws and regulations to investigate and respond to allegations and verifiable incidents of IUU fishing activities by their nationals, cooperate with the relevant agencies of other CPCs, and to report to ICCAT on actions and measures taken in accordance with the recommendation, effective July 2008. The United States already fully complies with the requirements of this recommendation by pursuing reports of illegal fishing activities by its citizens. A report of enforcement related activities pertaining to ICCAT species, which includes any IUU related enforcement actions, can be found in the NOAA Enforcement Actions Taken on ICCAT Species, page 18.

Recommendation by ICCAT on Additional Measures for Compliance with the ICCAT Conservation and Management Measures (06-15)
Under the United States Bluefin Tuna Statistical Document and domestic management programs, the United States is able to closely monitor domestic landings and exports of Atlantic bluefin tuna to ensure that exports do not exceed landings. Each commercially harvested Atlantic bluefin tuna landed in the United States is tagged with a uniquely numbered tail tag, and reported to NMFS within 24 hours of landing. Landings are tracked to ensure the U.S. fishery remains within its quota. Unique tail tag numbers must remain with Atlantic bluefin tuna carcasses until consumed, and are required for exports of domestically landed Atlantic bluefin tuna. In addition, United States regulations require that statistical documents accompany all imports of bluefin tuna.

Recommendation by ICCAT Establishing a Programme for Transshipment by Large-Scale Longline Fishing Vessels (06-11)
No U.S. action is necessary on this recommendation, as current U.S. regulations prohibit transshipment of HMS products in the convention area.

3.7 Other Recommendations

Recommendation by ICCAT on Vessel Chartering (02-21,03-21)
A final rule was published on December 6, 2004 (69 FR 70396), to implement recommendation 02-21 concerning vessel chartering. Recommendation 03-12 implemented monitoring measures for contracting parties, including maintaining up to date records of fishing vessels entitled to fly its flag and/or authorized to fish species managed by ICCAT in the convention area, which is an integral component of vessel chartering arrangements. The United States is complying with these recommendations by collecting all relevant information for monitoring before issuing the permits necessary to engage in vessel chartering arrangements. The United States issued one chartering permit in late 2004 which authorized chartering activities to take place in the ICCAT convention area during 2005.

Recommendation by ICCAT Concerning the Recording of Catch by Fishing Vessels in the ICCAT Convention Area (03-13)
The United States requires all commercial fishing vessels over 24 m in length to maintain logbooks specified by NMFS. For information on the implementation of this recommendation relative to recreational fishing vessels, see the section below entitled *Resolution on Improving Recreational Fishery Statistics*.

Resolution on Improving Recreational Fishery Statistics (Rec 99-13)
Recreational landings are estimated through a combination of tournament surveys (the Recreational Billfish Survey), the Large Pelagic Survey (LPS), the Marine Recreational Fishing Statistics Survey (MRFSS), mandatory non-tournament landings reporting requirements for Atlantic blue and white marlins, sailfish, swordfish, and bluefin tuna, as well as state landings data. Final regulations adopted in 1999 require selected HMS charter/headboat vessels that do not already complete a logbook to do so. Registration of all recreational fishing tournaments for Atlantic highly migratory species has been required since 1999. All tournaments for Atlantic highly migratory species are required to submit landing reports, if selected. Currently, 100 percent of billfish tournaments are selected for reporting. All non-tournament landings of Atlantic billfish and swordfish are required to be reported to the National Marine Fisheries Service within 24 hours of landing. In the fall of 2007, the United States enhanced recreational reporting by implementing a new internet based non-tournament reporting system for Atlantic billfish, including swordfish.

Resolution on Sea Turtles (03-11)
The 2003 resolution on sea turtles encourages ICCAT parties and cooperating parties to collect and provide the SCRS with information on interactions with sea turtles in ICCAT fisheries, including incidental catches and other impacts on sea turtles. The measure also encourages the release of all sea turtles that are incidentally caught alive and to share information, including technical measures, to reduce the incidental catch of sea turtles, and to ensure the safe handling of all turtles that are released to improve their survivability. The resolution also calls for the development of data collection and reporting methods for the incidental by-catch of sea turtles and to support efforts by the FAO to address the conservation and management of sea turtles. The United States complies with all of these requests.

In addition to the above activities, the United States has undertaken extensive research activities in its longline fleet for ways to reduce sea turtle interactions and increase survivability of sea turtles incidentally caught in longline fisheries. Results from U.S. research in the Atlantic Ocean have shown that larger circle hooks significantly reduce turtle catches in the pelagic longline fishery (e.g. with mackerel bait, the number of loggerhead turtles caught was reduced by 65%). Unlike "J" hooks, which are often swallowed, circle hooks often become anchored in the mouth, and therefore hook extraction is easier and safer for sea turtles. A number of tools are being used to remove line, hooks, or the barb or eye of hooks on boated turtles. Long handled line cutters and long handled de-hookers are used to remove gear from turtles too large to be boated. The Epperly Biopsy Pole is used with a stainless steel corer to take tissue samples for genetics. Short handled de-hookers are used to remove hooks from animals that are boated. A dip net is used to bring small (<50 kg) turtles aboard. Mouth openers and gags are used on boated turtles to allow access to internally lodged hooks. U.S. gear experts have presented this bycatch reduction technology and data from the research activities at approximately 15 international events that included fishing communities and resource managers between 2002 and mid-2005.

In 2004 (6 July, 2004; 63 FR 40734), the United Stated codified regulations that implemented measures to reduce sea turtle bycatch in Atlantic PLL fisheries for highly migratory species. These measures pertain to the entire U.S. Atlantic pelagic longline fishery, and include: mandatory bait specifications depending on fishing locale, use of circle hooks (size of hook depending on fishing locale), and the mandatory possession and use of sea turtle handling and release gear on board all vessels with pelagic longline gear. While exhibiting annual fluctuations, the U.S. pelagic longline fleet has seen a significant overall decline in the number of sea turtle interactions since implementation of the circle hook regulations in mid-2004. U.S. pelagic longline leatherback sea turtle interactions have ranged from an estimated 1,362 in 2004 to 368 in 2005 to 415 in 2006; loggerhead sea turtle interactions have fluctuated from an estimated 734 in 2004, to 283 in 2005 to 561 in 2006. As new technological solutions are discovered, the United States will continue to help share these innovations with other fishing nations.

Recommendation by ICCAT on Compliance with Statistical Reporting Obligations (05-09)

Recommendation 05-09 is intended to address compliance issues with statistical reporting obligations. It requires the Secretariat to identify data gaps, the SCRS to evaluate the impacts of data gaps on stock assessments and formulation of management advice, and for Contracting parties and CPCs, to provide explanations regarding reporting deficiencies and data gaps along with plans for corrective action. The United States is prepared to respond to the Secretariat as required under this recommendation.

Recommendation by ICCAT on Bluefin Tuna Farming (06-07)

Atlantic bluefin tuna have not been farmed in U.S. waters. The U.S. Bluefin Tuna Statistical Document program applies to farmed as well as wild-caught product, so statistical documents are required for imports of all farmed product.

Electronic Statistical Document Program (06-16)

The United States continues to implement an electronic system for the collection and dissemination of trade information. The International Trade Data System is a requirement under U.S. domestic legislation aimed at improving the efficiency of import and export processes as well as ensuring compliance with obligations to monitor the origin and safety of products. Given the domestic requirement to collect information from the trade community (shipper, carriers, brokers, etc.) in an electronic format, the U.S. is investigating ways to integrate ICCAT's statistical document programs into the internet-based electronic portal. As the electronic interface is developed, the U.S. will work with its importers and its ICCAT trading partners to determine how to collect the information required by the ICCAT trade monitoring programs through the Internet portal. It is anticipated that pilot projects will be launched with interested ICCAT parties in 2008.

U.S. Enforcement Actions

A summary of actions taken in ICCAT fisheries is provided below.

4. Other Activities

Recent U.S. management action for Atlantic HMS can be found online at: http://www.nmfs.noaa.gov/sfa/hms

Federal register notices containing the full text of proposed and final regulations can be found at: http://www.gpoaccess.gov/fr/index.html

NOAA ENFORCEMENT ACTIONS TAKEN ON ICCAT SPECIES

September 1, 2006 – August 31, 2007

During this reporting period, enforcement efforts consisted of dockside monitoring of offloads at major landing facilities in conjunction with dealer record checks, as well as at-sea boardings and visits to a limited number of concerned recreational marinas. Enforcement officials detected the following violations:

ENFORCEMENT ACTIONS	**#**
CASES OPENED THIS REPORTING PERIOD	**83**
REMAINING OPEN	**58**
CASES COMPLETED	**25**
WARNINGS ISSUED	**10**

VIOLATION	**CASE NUMBER**
General Requirements of the Atlantic Tunas Convention Act (ATCA) and Magnuson-Stevens Act (MSFCMA)	20
General Prohibitions under the ATCA and MSFCMA to include:	
Falsification of permit application information	1
Fishing, catching, possessing, retaining Atlantic Highly Migratory Species without a valid permit	12
Purchase, receipt, transfer, or attempts to do so, for commercial purposes, Atlantic HMS landed by non-permitted vessels, or without a valid dealer permit	2
Sale, transfer or attempted sale or transfer of Atlantic tuna, shark or swordfish to other than a permitted dealer	3
Falsification or failure to record required information	3
Failure to comply with at-sea observer coverage requirements	2
Assault, resist, impede, oppose, interfere with, or obstruct an authorized officer in lawful performance of their duties	1
Fail to install, activate, repair or replace a VMS unit prior to leaving port	4
Fail to contact NMFS or follow NMFS instructions when automatic position reporting has been interrupted	2

Failure to maintain an Atlantic HMS in the form specified	2
Fish for, catch, retain or possess an Atlantic HMS at less than its specified minimum size limit	6
Violation of any regulations under ATCA or MSFCMA	1
Possession of ICCAT species contrary to U.S. or Foreign Law	3
Deploy or fish with any gear from a vessel with pelagic longline onboard in any closed area	1
Deploy or fish a pelagic longline with live bait affixed to hooks, or to possess live bait, or set up a well tank on board a vessel in the Gulf of Mexico	3
Failure to Carry Required Sea Turtle Bycatch Mitigation Gear	1

Specific Prohibitions for Atlantic Tunas:

Fish for, catch, retain, or possess a BFT less than the large medium size class	1

Specific Prohibitions for Billfish:

Fail to report a billfish as specified	1

Specific Prohibitions for Sharks:

Exceeding a recreational retention limit for shark	1
Exceeding a commercial retention limit for shark	1
Failure to maintain a shark in its proper form	4
Sale or Purchase of Shark Fins Inconsistent with Carcass Weight	2
Retention, possession, sale or purchase of a prohibited shark or parts, or failure to disentangle a prohibited shark with least harm as specified.	6

Specific Prohibitions for Swordfish

No Reported Violations

This completes the NOAA Fisheries, Office for Law Enforcement, report of ICCAT-related actions.

FORM: COMP-017-LSTLV

MODEL FORMAT FOR ANNUAL REPORTING OF IMPLEMENTATION OF THE ICCAT MANAGEMENT STANDARD FOR LARGE-SCALE TUNA LONGLINE VESSELS

A. Management in the fishing grounds

	Surveillance & at-sea inspection by patrol boats	*Scientific Observer boarding*	*Satellite-based vessel monitoring system by management areas*	*Tags to differentiate catches by management areas*	*Real time catch report and Required period catch report*	*Entry/Exit report*
Yes, No	YES	YES	YES	YES	YES	YES
Note		See Section 2.2.10	100% of pelagic longline vessels	Bluefin Tuna	Atlantic Bluefin Tuna Vessel logbook program[1]	Vessel Logbook Program
Total number of patrol days at fishing grounds						

B. Management of transshipment (from the fishing grounds to the landing ports)

	Transshipment report	*Port inspection*	*Statistical document program*
Yes, No	NO	YES	YES
Note	Transhipment Prohibited	As noted, transshipment is prohibited. However, the United States has port sampling agents stationed at major ports along its Atlantic and Gulf of Mexico coasts to collect biological samples and size frequency, age-at-length, catch per unit of effort, and catch composition data. Port samplers also routinely visit major fish dealers and randomly sample catches.	Bluefin Tuna Bigeye Tuna--frozen Swordfish

C. Management at landing ports

	Landing inspection	*Landing reporting*	*Cooperation with other Parties*
Yes, No	YES	YES	YES
Note	Port Sampling Program. See (B) above.	Vessel Logbook Dealer Reporting Program[2] Statistical Document Programs Recreational Surveys	

[1]Vessel logbook program. Annual vessel permits are required for commercial and recreational vessels targeting Atlantic tunas (bluefin, yellowfin, bigeye, albacore, and skipjack), U.S. commercial vessels fishing for swordfish, and commercial vessels fishing for Atlantic sharks in the U.S. Exclusive Economic Zone (EEZ). All commercially permitted vessels may be selected for submission of vessel logbooks. Logbooks contain information on fishing vessel activity, including dates of trips, number of sets, area fished (lat./long.), number of fish and other marine species caught, released and retained. Submission of social and economic data such as volume and cost of fishing inputs is mandatory, if selected. Logbooks must be filled out within 48 hours of completing a day's fishing activities for multiple-day fishing trips or, before offloading for 1-day trips. Logbooks must be mailed within 7 days of offloading.

[2]Dealer reporting program. Dealer permits are required for the commercial receipt of Atlantic tuna, swordfish, and sharks. Bluefin tuna dealers report imports through the Bluefin Statistical Document, as described below, while swordfish dealers report through the dealer import form. Dealer reports must be submitted to NMFS twice a month for all swordfish, sharks and tunas. Dealers are required to record each purchase of Atlantic bluefin tuna on a landing card and provide the information to NMFS within 24 hours of the purchase or receipt of the fish. The landing cards, which are used to monitor the bluefin tuna quota, include the following information: dealer number, dealer name, date the fish was landed, harvest gear, fork length, weight (whole or dressed), identification tag number, area where fish was caught, port where landed, Atlantic tuna permit number, vessel name, and the name and dated signature of the vessel's master.

Appendix Table 2.1-YFT. Annual Landings (MT) of Yellowfin Tuna from 2002 to 2006.

Area	Gear	2002	2003	2004	2005	2006
NW Atlantic	Longline	400	272	659	394	703
	Rod and reel*	2,624	4,672	3,434	3,504	4,649
	Gillnet	5	1	3	0.1	5
	Trawl	0	2	2	0.2	0.7
	Handline	137	148	213	105	103
	Uncl	**	0	11	4	4
Gulf of Mexico	Longline	2,109	1,828	1,812	1,210	1,121
	Rod and reel*	200	640	247	147	258
	Handline	100	59	28	46	43
Caribbean	Longline	12	7	4	141	180
	Handline	7	9	7	10	8
NC Area 94a	Longline	0	5	**	0.5	0
SW Atlantic	Longline	52	42	17	0	0
	Total	**5,646**	**7,685**	**6,437**	**5,562**	**7,075**

Note: not all gears are represented in this Table; therefore some total values in the Table are a portion of the total U.S. landings of YFT.

* Rod and Reel catches and landings represent estimates of landings and dead discards based on statistical surveys of the U.S. recreational harvesting sector.

** ≤= 0.05 MT

Appendix Table 2.1-SKJ. Landings (MT) of Skipjack Tuna from 2002 to 2006

Area	Gear	2002	2003	2004	2005	2006
NW Atlantic	Longline	**	0.9	0.1	0.05	**
	Rod and reel*	23.3	34.0	27.3	8	35
	Gillnet	**	0.9	16.7	2	0.2
	Trawl	**	0.5	0.2	0.07	0.8
	Handline	0.2	0.2	0.6	0.9	0.2
	Trap	**	1.5	**	0	0.3
Gulf of Mexico	Longline	**	**	0.3	0.3	0
	Rod and reel*	13.2	11	6.3	3	6.4
	Handline	0.0	**	0.2	**	0
Caribbean	Longline	2.5	3.3	0.3	0.2	0.2
	Gillnet	0.6	0.4	0.3	0.06	**
	Handline	12.5	9.2	9.6	11	10
	Rod and reel*	33	16	40	4	8
	Total	**85.3**	**77.9**	**101.9**	**29.6**	**61**

Note: not all gears are represented in this Table; therefore total values in the Table are a portion of the total U.S. landings of SKJ.

* Rod and Reel catches and landings represent estimates of landings and dead discards based on statistical surveys of the U.S. recreational harvesting sector.

** ≤= 0.05 MT

Appendix Table 2.1-BET. Landings (MT) of Bigeye tuna by year for 2002-2006.

Area	Gear	2002	2003	2004	2005	2006
NW Atlantic	Longline	329	169	267	273	465
	Rod and reel*	50	189	95	165	422
	Handline	14	6	3	6	21
	Trawl	0.5	**	1	0.6	0
	Uncl	0.0	0.0	4	0.6	0.8
Gulf of Mexico	Longline	41	27	20	25	38
	Rod and reel*	0	0	6	0	24
	Handline	0.6	0.3	0.2	0.1	2
Caribbean	Longline	30	7	3.5	7	11
	Handline	0.0	0.0	0.06	**	0
NC Area 94a	Longline	45	37	5	7	3
SW Atlantic	Longline	91	45	14	0	0
	Total	**600**	**480**	**419**	**484**	**987**

Note: not all gears are represented in this Table; therefore total values in the Table are a portion of the total U.S. landings of BET.

* Rod and Reel catches and landings represent estimates of landings and dead discards based on statistical surveys of the U.S. recreational harvesting sector.

** $\leq$= 0.05 MT

Appendix Table 2.2-BFT. Landings (MT) of Bluefin tuna for 2005 to 2006.						
Area	Gear	2002	2003	2004	2005	2006
NW Atlantic	Longline	7.8	16.3	28.8	22.3	30
	Handline	4.5	2.5	1.5	2.3	4.7
	Purse Seine	207.7	265.4	31.8	178.3	3.6
	Harpoon	55.5	87.9	41.2	31.5	30.3
	* Rod and reel (>145 cm LJFL)	1008.4	684.8	329.0	254.4	217.2
	* Rod and reel (<145 cm LJFL)	519.3	314.6	387.4	170.4	158.2
Gulf of Mexico	Longline	32.8	53.8	67.3	45.7	17.5
	* Rod and reel	1.5	0.0	0.0	0.0	0.6
NC area 94a	Longline	9.3	11.3	12.1	13	10.1
	TOTAL	**1847**	**1437**	**899**	**718**	**472**

Appendix Table 2.2-ALB. Landings (MT) of Albacore tuna for 2002 to 2006.						
Area	Gear	2002	2003	2004	2005	2006
NW Atlantic	Longline	124.0	95.6	106.6	88.9	82.3
	Gillnet	2.6	0.1	4.9	6	0.8
	Handline	3.9	1.4	6.1	3	2.5
	Trawl	0.3	**	2.7	1.7	1.2
	Rod and reel*	323.0	333.8	500.5	356	284
	Uncl	0.0	0.0	3.6	9.9	6.7
Gulf of Mexico	Longline	9.5	7.7	9.8	6.9	7.6
	Handline	0.0	**	0.0	0.2	0.1
Caribbean	Longline	8.4	4.0	3.2	12	10.5
	Trap	0.6	0.2	0.0	0.0	0.0
	Handline	2.7	2.0	2.1	1	0.4
NC Area 94a	Longline	4.8	1.6	0.2	0.6	**
SW Atlantic	Longline	8.3	2.0	0.5	0.0	0.0
	Total	**488**	**448**	**640**	**486**	**396**

Note: not all gears are represented in these Tables; therefore total values in the Table are a portion of the total U.S. landings of ALB and BFT.

** ≤= 0.05 MT

* Rod and Reel catches and landings represent estimates of landings and dead discards when available based on statistical surveys of the U.S. recreational harvesting sector.

Appendix Table 2.3-SWO. Catches and Landings (MT) of Swordfish for 2002 to 2006.						
Area	Gear	2002	2003	2004	2005	2006
NW Atlantic	* Longline	1,132.8	1,341.3	1,169.6	1,096.3	1,154.5
	Gillnet	0.1	0.0	**	0.0	0.0
	Handline	8.8	10.8	18.7	34.4	32.4
	Trawl	3.9	6.0	8.3	8.2	3.7
	* unclassified	1.6	1.6	3.9	4.7	5.1
	Harpoon	2.8	0.0	0.5	0.0	0.3
	Rod and Reel***	21.5	5.9	24.3	53.1	50.6
Gulf of Mexico	* Longline	549.1	507.6	453	480.9	324.2
	* unclassified	5.7	3.4	**	4.1	2.7
	Rod and Reel***	0.0	**	0.5	1.5	2.1
	Handline	2.9	9.8	4	0.3	4.3
Caribbean	* Longline	329.0	274.5	295.9	143.5	88.9
	* unclassified	0.2	0.15	**	0.7	0
	Rod and Reel***	0.0	0.0	0.4	6.6	0
NC Area 94a	* Longline	587.9	632.8	599.9	552.3	379.6
	* unclassified	0.2	0.3	0.1	1.2	0.0
S Atlantic	* Longline	199.9	20.9	15.7	0.0	0.0
	TOTAL	**2,606.5**	**2,815**	**2,594**	**2,387**	**2,048**

Note: not all gears are represented in this Table; therefore total values in the Table are a portion of the total U.S. landings of SWO.

* includes *landings* and *estimated discards* from scientific observer and logbook sampling programs.

** $\leq$ = 0.5 MT

*** Rod and Reel catches and landings represent estimates of landings and dead discards when available based on statistical surveys of the U.S. recreational harvesting sector.

Appendix Table 2.6a-SHK. Estimates of commercial and recreational landings and dead discards for pelagic sharks in the U.S. Atlantic, Gulf of Mexico, and Caribbean.

	Commercial					Recreational			Discards			Total	
Year	**MT (ww)** [1]	**MT (dw)** [2]	**lb (dw)** [3]	**av. weight**[4]	**number** [5]	**number** [6]	**av. weight**[7]	**lb (dw)**	**number**	**MT (ww)**	**lb (dw)** [8]	**number**	**lb (dw)**
1982	45.41	23.17	51,077		1,354	20,015	50.996	1,020,685				21,369	1,071,762
1983	51.89	26.48	58,367		1,627	21,968	117.64	2,584,316				23,595	2,642,683
1984	49.12	25.06	55,250		1,538	23,295	67.489	1,572,156				24,833	1,627,406
1985	57.99	29.59	65,227		1,969	92,998	38.224	3,554,756				94,967	3,619,982
1986	68.50	34.95	77,049		2,385	42,572	65.631	2,794,043				44,957	2,871,091
1987	87.46	44.62	98,375		2,786	37,153	39.002	1,449,041	13,092	560.64	630,606	53,031	2,178,022
1988	129.48	66.06	145,639		3,915	32,993	41.271	1,361,654	13,655	468.74	527,237	50,563	2,034,530
1989	141.36	72.12	159,001		4,937	18,255	73.228	1,336,777	13,480	538.21	605,376	36,672	2,101,155
1990	102.74	52.42	115,566		3,274	11,630	41.246	479,691	13,955	795.97	895,300	28,859	1,490,557
1991	114.32	58.33	128,587		3,290	10,070	62.061	624,954	17,232	813.21	914,695	30,592	1,668,236
1992	139.81	71.33	157,258	34.896	4,111	16,304	39.219	639,427	8,939	298.31	335,538	29,354	1,132,222
1993	387.30	197.60	435,638	26.133	5,278	29,162	50.988	1,486,912	30,545	1191.52	1,340,217	64,985	3,262,767
1994	513.46	261.97	577,535	24.003	6,688	5,638	68.28	384,963	13,410	637.71	717,294	25,736	1,679,791
1995	393.93	200.98	720,219	39.054	18,442	32,673	47.629	1,556,182	10,864	710.27	798,909	61,979	3,075,310
1996	402.03	205.12	760,364	68.569	11,089	18,534	33.697	624,540	22,153	949.22	1,067,682	51,776	2,452,586
1997	381.08	194.43	739,486	35.926	20,584	8,743	54.834	479,414	7,754	250.42	281,671	37,081	1,500,571
1998	267.07	136.26	624,483	66.054	9,454	11,762	35.977	423,161	6,002	280.09	315,044	27,218	1,362,688
1999	113.10	57.70	376,471	40.925	9,199	11,122	48.304	537,237	3,464	117.63	132,310	23,785	1,046,018
2000	191.15	97.53	407,647	35.402	11,515	13,353	16.749	223,649	7,495	216.13	243,102	32,363	874,399
2001	193.58	98.77	411,574	18.746	21,955	3,777	83.938	317,034	6,158	155.75	175,187	31,890	903,795
2002	174.06	88.81	533,247	18.450	28,902	4,673	87.152	407,261	5,335	92.73	104,302	38,910	1,044,811
2003	155.55	79.36	641,044	19.911	32,195	4,298	35.88	154,212	4,341	71.93	80,907	40,834	876,163
2004	203.61	103.88	808,791	33.631	24,049	4,964	55.796	276,971	2,697	63.92	71,897	31,710	1,157,659
2005	194.87	99.42	425,864	46.605	9,138	5,392	31.204	168,252	2,579	149.34	167,977	17,109	762,093
2006	134.49	68.62	274,637	33.056	8,308	18,090	66.229	1,198,083	4,092	143.22	161,093	30,490	1,633,813

[1] In whole weight from weighout data sheets; [2] Whole weight to dressed weight conversion ratio is 1.96; [3] 1982-1994 data are from weighout data sheets, 1995-2006 data are the sum of the southeast quota monitoring program/southeast general canvass and the northeast general canvass/dealer weighout data; 4 In pounds dressed weight from weightout data sheets; [5] 1982-1994 data are taken directly from weighout data sheets, 1995-2006 by dividing values in fourth column (lb dw) by those data obtained in fifth column (av. weight); [6] Almost all recreational landings are from the MRFSS survey; [7] In pounds dressed weight; [8] Whole weight to dressed weight conversion ratio is 1.96.

Appendix Table 2.6a-SHK. Estimates of commercial and recreational landings and dead discards for blue sharks in the U.S. Atlantic, Gulf of Mexico, and Caribbean.

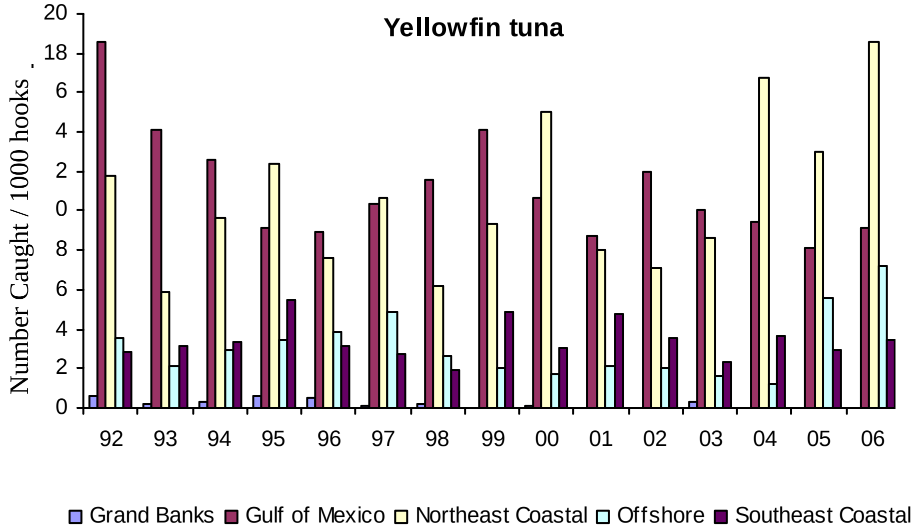
	Commercial					Recreational			Discards			Total	
Year	MT (ww) [1]	MT (dw) [2]	lb (dw) [3]	av. weight[4]	number [5]	number [6]	av. weight[7]	lb (dw)	number	MT (ww)	lb (dw) [8]	number	lb (dw)
1982	0.00	0.00	0		0	0	45.435	0				0	0
1983	0.00	0.00	0		0	14,593	45.435	663,027				14,593	663,027
1984	0.00	0.00	0		0	2,579	45.435	117,176				2,579	117,176
1985	0.00	0.00	0		0	11,621	33.003	383,528				11,621	383,528
1986	0.40	0.20	450		6	18,898	66.182	1,250,707				18,904	1,251,157
1987	0.00	0.00	0		0	20,683	47.545	983,373	12,506	526.20	591,868	33,189	1,575,241
1988	0.10	0.05	112		4	12,235	32.62	399,106	12,934	421.16	473,719	25,173	872,937
1989	0.00	0.00	0		0	7,419	41.011	304,261	12,525	480.00	539,902	19,944	844,163
1990	0.25	0.13	286		6	1,745	56.134	97,954	13,141	741.33	833,845	14,892	932,084
1991	0.00	0.00	0		0	6,643	52.12	346,233	16,562	772.32	868,702	23,205	1,214,936
1992	0.47	0.24	529	16.100	14	5,853	41.191	241,091	7,043	184.39	207,401	12,910	449,021
1993	7.88	4.02	8,860	16.100	85	14,114	53.567	756,045	29,329	1136.33	1,278,139	43,528	2,043,044
1994	7.82	3.99	8,796	15.600	105	507	45.435	23,035	11,986	572.24	643,653	12,598	675,485
1995	3.61	1.84	7,162	19.400	369	464	45.435	21,082	9,725	618.15	695,293	10,558	723,536
1996	5.40	2.76	24,005	44.400	541	9,150	34.070	311,741	18,996	710.69	799,381	28,687	1,135,127
1997	1.42	0.72	2,491	28.700	87	4,236	55.740	236,115	6,614	184.61	207,643	10,937	446,249
1998	2.87	1.46	3,925	47.100	83	6,085	45.435	276,469	5,295	195.25	219,616	11,463	500,011
1999	0.16	0.08	1,048	19.900	53	5,218	45.435	237,078	2,772	98.96	111,310	8,043	349,435
2000	0.61	0.31	4,124	11.700	352	7,011	45.435	318,542	6,298	137.19	154,311	13,661	476,977
2001	3.09	1.58	3,548	10.500	338	950	45.435	43,163	5,219	105.87	119,082	6,507	165,793
2002	0.20	0.10	228	14.400	16	0	45.435	0	4,335	67.87	76,340	4,351	76,568
2003	1.43	0.73	7,932	15.200	522	376	45.435	17,083	3,362	54.79	61,628	4,260	86,643
2004	6.96	3.55	7,837	18.200	431	0	45.435	0	2,697	63.92	71,897	3,128	79,734
2005	1.78	0.91	2,002	13.000	154	31	45.435	1,408	1,407	66.13	74,383	1,592	77,793
2006	1.70	0.87	2,500	18.600	134	980	45.435	44,526	2,584	45.20	50,841	3,698	97,867

[1] In whole weight from weighout data sheets; [2] Whole weight to dressed weight conversion ratio is 1.96; [3] 1982-1994 data are from weighout data sheets, 1995-2006 data are the sum of the southeast quota monitoring program/southeast general canvass and the northeast general canvass/dealer weighout data; 4 In pounds dressed weight from weightout data sheets; [5] 1982-1994 data are taken directly from weighout data sheets, 1995-2006 by dividing values in fourth column (lb dw) by those data obtained in fifth column (av. weight); [6] Almost all recreational landings are from the MRFSS survey; [7] In pounds dressed weight; [8] Whole weight to dressed weight conversion ratio is 1.96.

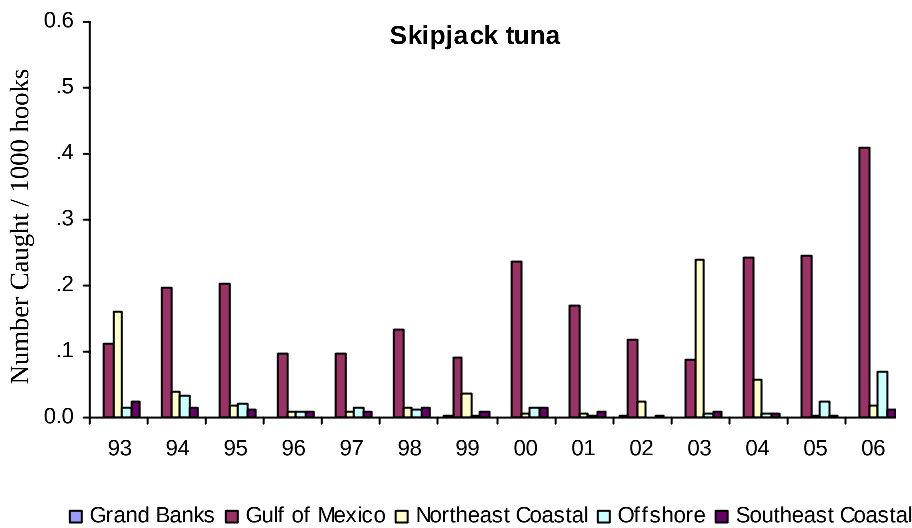
Appendix Table 2.6a-SHK. Estimates of commercial and recreational landings and dead discards for shortfin mako sharks in the U.S. Atlantic, Gulf of Mexico, and Caribbean.

	Commercial					Recreational			Discards			Total	
Year	MT (ww) [1]	MT (dw) [2]	lb (dw) [3]	av. weight[4]	number [5]	number [6]	av. weight[7]	lb (dw)	number	MT (ww)	lb (dw) [8]	number	lb (dw)
1982	42.12	21.49	47,376		1,298	13,522	50.996	689,568				14,820	736,944
1983	6.78	3.46	7,626		225	7,375	51.597	380,529				7,600	388,155
1984	42.46	21.66	47,759		1,436	15,474	67.531	1,044,975				16,910	1,092,734
1985	53.24	27.16	59,884		1,877	79,912	41.487	3,315,309				81,789	3,375,193
1986	64.76	33.04	72,842		2,318	20,792	70.107	1,457,665				23,110	1,530,507
1987	77.84	39.71	87,554		2,592	14,809	35.069	519,337	217	8.72	9,808	17,618	616,699
1988	101.37	51.72	114,021		3,398	19,998	44.693	893,771	127	5.08	5,714	23,523	1,013,505
1989	124.56	63.55	140,105		4,608	8,367	90.117	754,009	249	9.01	10,134	13,224	904,248
1990	91.77	46.82	103,223		3,081	8,509	35.483	301,925	259	10.31	11,593	11,849	416,741
1991	104.87	53.51	117,957		3,085	3,422	69.02	236,186	245	11.16	12,553	6,752	366,697
1992	125.97	64.27	141,691	64.400	3,782	8,382	33.589	281,543	771	38.41	43,203	12,935	466,437
1993	281.09	143.41	316,164	35.800	4,044	15,034	49.883	749,941	562	24.03	27,029	19,640	1,093,134
1994	324.66	165.64	365,177	39.100	4,623	4,496	79.296	356,515	558	21.45	24,127	9,677	745,818
1995	288.83	147.36	460,767	52.700	8,743	31,212	51.227	1,598,897	446	28.44	31,989	40,401	2,091,653
1996	238.05	121.46	427,020	87.000	4,908	8,618	30.265	260,824	0	0.00	0	13,526	687,844
1997	245.46	125.23	446,305	44.000	10,143	3,025	60.839	184,038	0	0.00	0	13,168	630,343
1998	199.76	101.92	401,491	72.600	5,530	5,633	29.590	166,680	0	0.00	0	11,163	568,171
1999	90.05	45.94	217,867	47.000	4,635	1,383	51.597	71,359	0	0.00	0	6,018	289,226
2000	166.74	85.07	286,764	44.200	6,488	5,813	51.597	299,934	0	0.00	0	12,301	586,698
2001	182.02	92.87	347,844	50.700	6,861	2,827	83.938	237,293	0	0.00	0	9,688	585,137
2002	165.59	84.48	314,736	38.900	8,091	3,206	87.152	279,409	0	0.00	0	11,297	594,145
2003	140.80	71.84	285,575	40.000	7,139	3,922	51.597	202,364	0	0.00	0	11,061	487,939
2004	188.31	96.07	392,642	39.700	9,890	4,964	55.796	276,971	0	0.00	0	14,854	669,613
2005	186.03	94.91	375,819	56.800	6,617	3,857	31.204	120,354	0	0.00	0	10,474	496,173
2006	129.67	66.16	237,176	37.600	6,308	3,363	53.232	179,019	0	0.00	0	9,671	416,195

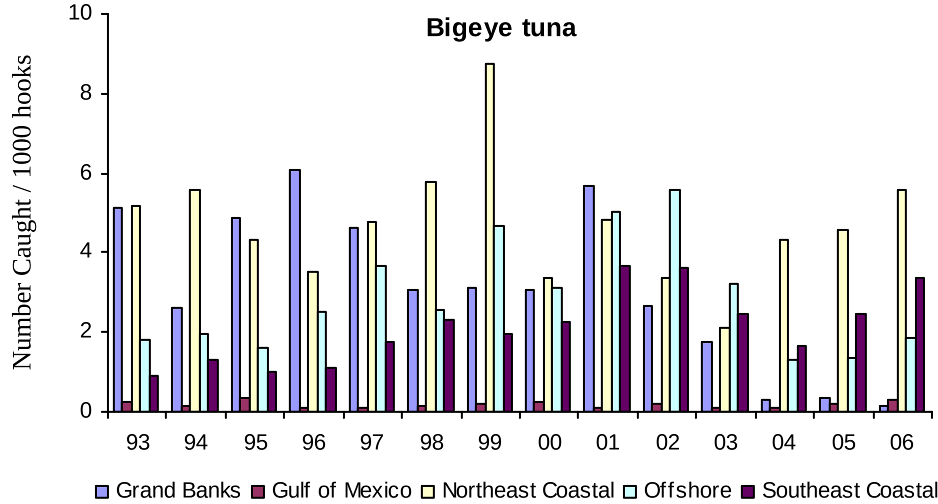
[1] In whole weight from weighout data sheets; [2] Whole weight to dressed weight conversion ratio is 1.96; [3] 1982-1994 data are from weighout data sheets, 1995-2006 data are the sum of the southeast quota monitoring program/southeast general canvass and the northeast general canvass/dealer weighout data; 4 In pounds dressed weight from weightout data sheets; [5] 1982-1994 data are taken directly from weighout data sheets, 1995-2006 by dividing values in fourth column (lb dw) by those data obtained in fifth column (av. weight); [6] Almost all recreational landings are from the MRFSS survey; [7] In pounds dressed weight; [8] Whole weight to dressed weight conversion ratio is 1.96.



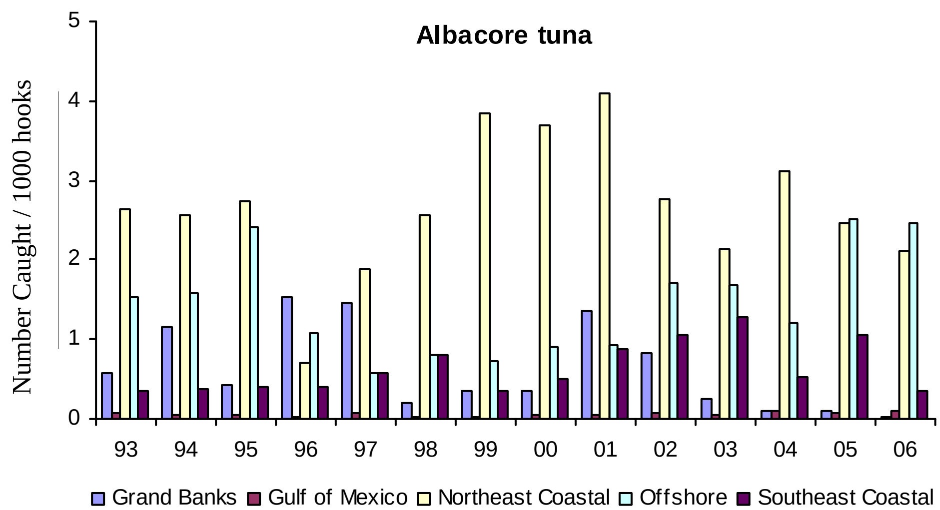
Appendix Figure 2.1 – YFT. *Nominal catch rates for YFT in U.S. pelagic longline logbook reports.*



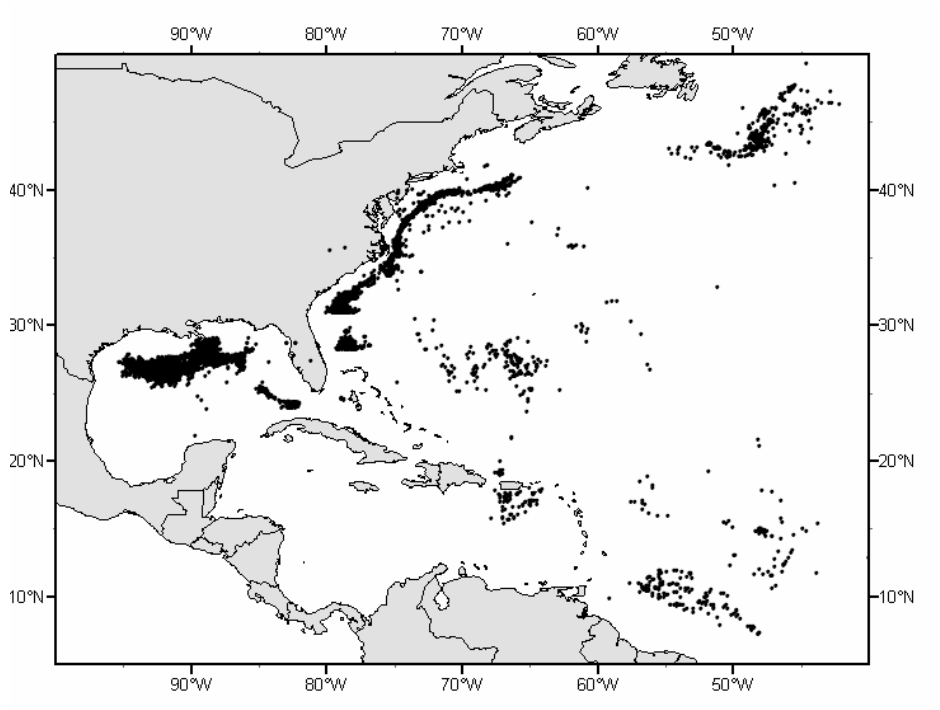
Appendix Figure 2.1 – SKJ. *Nominal catch rates for SKJ in U.S. pelagic longline logbook reports.*

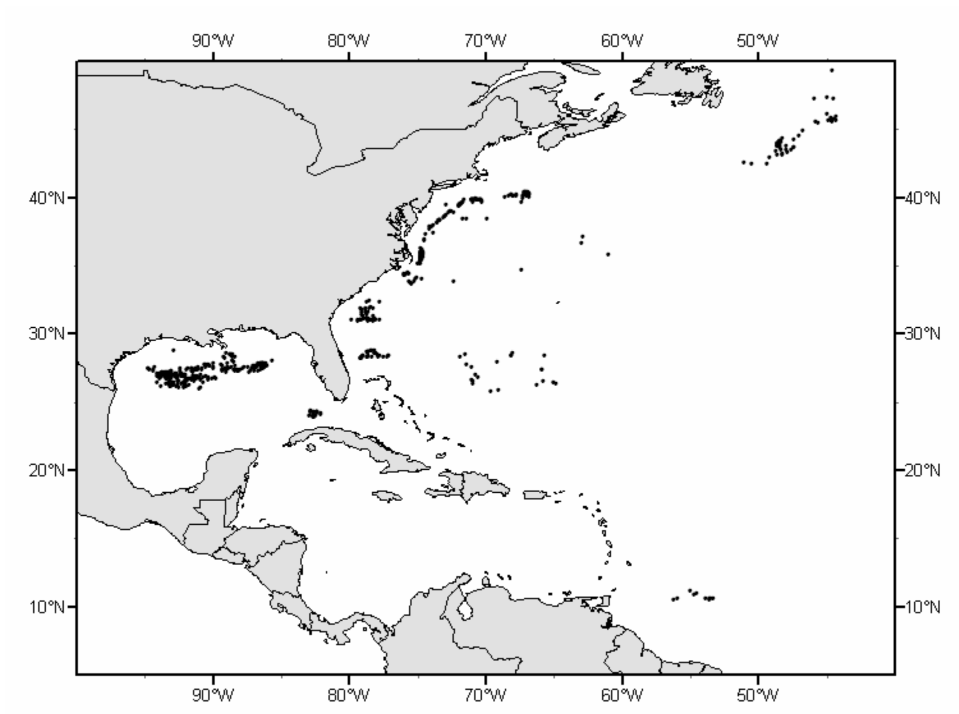


Appendix Figure 2.1 – BET. *Nominal catch rates for BET in U.S. pelagic longline logbook reports.*

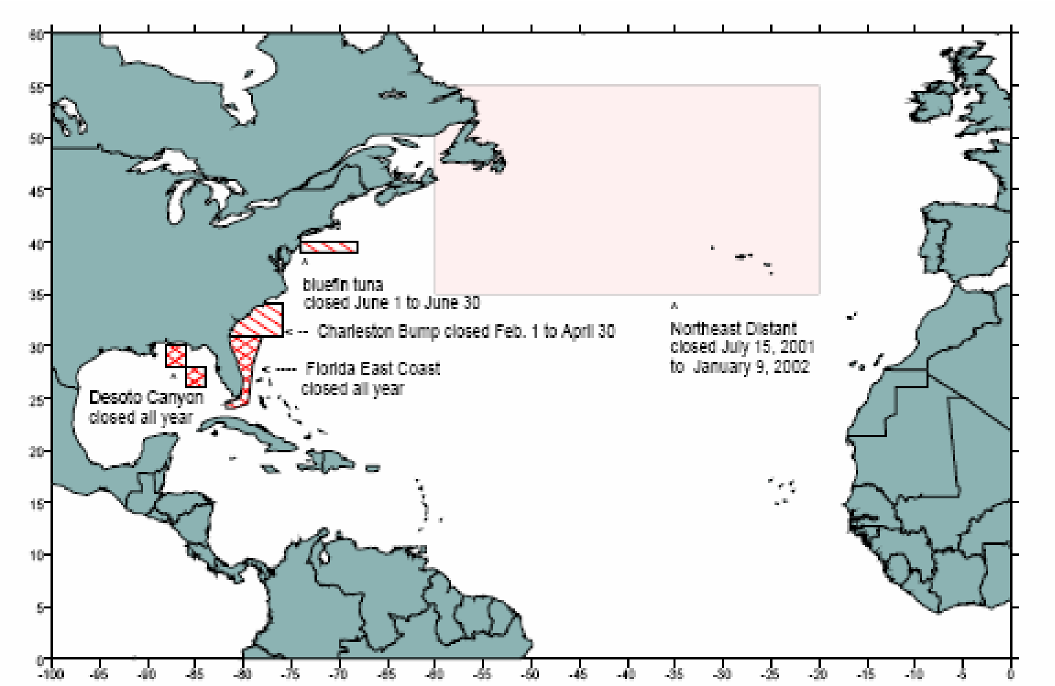


Appendix Figure 2.1 – ALB. *Nominal catch rates for ALB in U.S. pelagic longline logbook reports.*





Appendix Figure 2.2 – *Reported (upper) and observed (lower) longline sets position in 2006.*



Appendix Figure 2.3- Time/area closures for the U.S. longline fishery in 2006. Note that the Northeast Distant area is currently open for fishing activities.

Appendix*. *Affect of time/area closures on U.S. swordfish catch.

Beginning in the year, 2001, U.S pelagic longline fishing was prohibited or restricted in the five areas and times shown in Figure 1. The three southern areas, (Charleston Bump, Florida East Coast, and Desoto Canyon), were selected, at least in part, to reduce the catch of swordfish < 125 cm and other bycatch. The bluefin tuna area was closed primarily to reduce the catch of bluefin smaller than legal size for sale by U.S. fishers. Longline vessels were allowed to fish in the Northeast Distant area if they participated in a turtle study and carried an observer. In 2002 the Northeast Distant area was closed all year to vessels not participating in the turtle study.

The number of longline vessels in the U.S. fishery targeting swordfish has declined steadily since the mid 1990's. Reported effort (hooks) declined initially but has remained fairly stable since 1998 (Table 1). The percentage effort in hooks and the catch of swordfish < 125 cm in numbers (reported) and in metric tons (estimated) in 2002, 2003, and 2004 are compared to the average effort and catch from 1997 through 1999 (Table 2). There was some overall reduction in effort, reported in hooks fished. Some of the effort previously reported from the Florida East Coast fishing area appears to have redistributed into the Gulf of Mexico and up to the south Atlantic and Mid Atlantic Bights. The years 2002, 2003, and 2004 and the average (1997-1999) catch of swordfish < 125 cm in numbers (reported) and in metric tons (estimated) and effort in hooks are reported by area and time/area status in Table 3. Although the metric tons of swordfish < 125 cm estimated caught increased in some areas compared to the 1997-99 average, notably the Caribbean and the Gulf of Mexico, the overall change in estimates was a reduction of approximately 50% in the years since implementation.

Table 1. *Numbers of Active Vessels.* "Vessels" indicates the number of vessels that submitted at least one positive fishing report during that year, "Vessels that caught SWO" corresponds to the number of vessel that reported catching at least one swordfish during that year and "Vessles that caught SWO in 5 month period" indicates the number of vessels that reported catching at least one swordfish per month in at least five months of that year. "Hooks Reported" includes all submitted logbooks whether or not they represented single pelagic longline sets, summary records, bottom longline records, or sets with less than 100 hooks fished.

Year	Vessels	Vessels that caught SWO	Vessels that caught SWO in 5 month period	Hooks reported
1988	388	338	210	7,009,358
1989	456	415	251	7,927,401
1990	419	363	209	7,500,095
1991	342	308	176	7,754,127
1992	340	304	184	9,076,717
1993	435	306	177	9,735,806
1994	501	306	176	10,351,805
1995	489	314	198	11,270,539
1996	367	275	194	10,944,660
1997	352	265	167	10,213,780
1998	288	233	139	8,120,273
1999	226	200	143	7,996,685
2000	206	185	135	8,158,390
2001	185	168	114	7,897,037
2002	149	140	107	7,107,958
2003	123	119	94	6,862,091
2004	117	114	96	7,345,048
2005	112	108	79	5,973,150
2006	103	100	77	5,764,251

Table 2. Catch in numbers (reported) and in metric tons (estimated) of swordfish < 125 cm and reported number of hooks in years 2004-2006 by longline gear expressed as percentage of the mean from years 1997-1999 by area Caribbean (CAR), Florida East coast (FEC), Gulf of Mexico (GOM), Mid Atlantic Bight (MAB), Northeast Central (NEC), Northeast Distant (NED), and South Atlantic Bight (SAB).

	Number of SWO				Number of Hooks				Metric tons			
	Mean	2004	2005	2006	Mean	2004	2005	2006	Mean	2004	2005	2006
CAR	434	104%	46%	13%	237,280	122%	70%	31%	6	100%	44%	12%
FEC	2,500	6%	50%	3%	619,099	38%	47%	34%	37	5%	46%	4%
GOM	1,820	117%	109%	90%	2,858,863	123%	92%	79%	17	120%	124%	90%
MAB	1,213	87%	88%	86%	1,008,860	75%	74%	98%	18	84%	89%	80%
NEC	769	26%	23%	21%	734,782	53%	43%	515%	11	24%	22%	20%
NED	983	27%	8%	7%	497,606	90%	86%	68%	13	28%	8%	90%
SAB	2,412	42%	51%	45%	601,499	95%	68%	82%	39	37%	50%	47%

Table 3. Catch in numbers (reported) and in metric tons (estimated) of swordfish < 125 cm and number of hooks reported by longline gear in year 2002-2004 and the average for years 1997-1999 by area Caribbean (CAR), Florida East coast (FEC), Gulf of Mexico (GOM), Mid Atlantic Bight (MAB), Northeast Central (NEC), Northeast Distant (NED), and South Atlantic Bight (SAB) and status of time/area closure.

		Number of SWO				Number of Hooks				Metric tons				Change in MT.		
		Mean	2004	2005	2006	Mean	2003	2004	2005	Mean	2004	2005	2006	2004	2005	2006
CAR	Open	434	449	199	58	2,372,280	113,176	289,726	165,073	6	6	3	1	0	-3	-5
FEC	Closed	2,364	98	77	56	475,733	282,842	171,494	194,685	35	1	2	1	-34	-32	-34
FEC	Open	136	43	1,169	28	143,366	172,071	54,095	97,985	2	1	16	0	-4	14	-2
GOM	Closed	426	3	2	5	237,572	8,750	4,900	6,480	4	0	0	0	-4	-4	-4
GOM	Open	1,394	2,127	1,987	1,639	3,621,292	3,102,043	3,504,505	2,628,039	13	21	21	16	7	8	2
MAB	Closed	2	0	0	0	6,250	0	0	0	0	0	0	0	0	0	0
MAB	Open	1,211	1,053	1,066	1,036	1,002,610	530,713	747,390	740,759	18	15	16	14	-3	-2	-3
NEC	Closed	11	0	0	0	41,150	0	954	0	0	0	0	0	0	0	0
NEC	Open	769	202	178	158	734,782	388,706	412,808	316,401	11	3	2	2	-8	-9	-9
NED	Closed	983	262	82	0	496,806	576,727	446,477	425,910	13	4	1	0	-9	-12	-13
NED	Open	0	0	0	73	800	2,858	0	1,100	0	0	0	1	0	0	1
SAB	Closed	939	0	0	3	216,264	5,660	3,360	1,360	15	0	0	0	-15	-15	-15
SAB	Open	1,474	1,018	1,237	1,080	385,236	458,775	569,134	410,570	24	15	19	18	-9	-4	-6

THE U.S. NATIONAL PLAN OF ACTION FOR REDUCING THE INCIDENTAL CATCH OF SEABIRDS IN LONGLINE FISHERIES (NPOA): ITS IMPLMENTATION IN THE U.S. ATLANTIC TUNA, SWORDFISH, AND SHARK LONGLINE FISHERIES

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Report to
NOAA FISHERIES NATIONAL SEABIRD PROGRAM

September 2007

ICCAT Resolution on Incidental Mortality of Seabirds

Seabirds are one of several non-target taxa captured incidentally in various fisheries throughout the world. The capture and loss of non-target species is of concern for many reasons, not the least of which are waste of living marine resources and impacts on protected species. Incidental catch of non-target marine species such as marine mammals, sea turtles, and seabirds has generated growing concern over the long-term ecological effects of such bycatch in longline and other fisheries conducted in many areas of the world's oceans. For seabirds, incidental catches of non-target species with low population numbers could contribute to declines of populations affected by habitat loss, disturbance at nesting sites, pollution, marine debris, disease, and shifting patterns of food availability.

At its 2002 annual meeting, ICCAT adopted a Resolution on Incidental Mortality of Seabirds (Resolution 02-14). This resolution urges parties to inform ICCAT's Standing Committee on Research and Statistics (SCRS) and the Commission of the status of their National Plans of Action for Reducing Incidental Catches of Seabirds in Longline Fisheries (NPOA-Seabirds) and to implement such plans, where appropriate. Furthermore, the resolution encourages parties to collect and provide to SCRS all available information on interactions with seabirds, including incidental catches in all fisheries under the purview of ICCAT. The resolution further states that when feasible and appropriate, SCRS should present to the Commission an assessment of the impact of incidental catch of seabirds resulting from the activities of all the vessels fishing for tunas and tuna-like species in the Convention Area. The ICCAT website at http://www.iccat.es/ provides additional information and a copy of the resolution. The United States included seabird information in its National Reports to ICCAT in 2004 through 2006.

The *International Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries* (IPOA-S) applies to "States" (hereafter Countries) in whose waters longline fishing is being conducted by their own or foreign vessels, and to Countries that conduct longline fishing on the high seas and in the exclusive economic zones (EEZs) of other Countries. The IPOA-S is a voluntary measure that calls on Countries to: (1) assess the degree of seabird bycatch in their longline fisheries; (2) develop individual national plans of action to reduce seabird bycatch in longline fisheries that have a seabird bycatch problem; and (3) develop a course of future research and action to reduce seabird bycatch. The IPOA-S calls for each Country to develop and implement a national plan consistent with the FAO *Code of Conduct for Responsible Fisheries* (FAO 1999) and all applicable rules of international law, and in conjunction with relevant international organizations. A summary of the United States National Plan of Action was provided in the 2006 U.S. Annual Report.

Progress in 2006 and 2007

Substantial progress was made in 2006 and 2007 in both interagency and international cooperation and collaboration.

1) Interagency: In January 2007, NMFS and FWS participated with NGOs in a Marine Bird Meeting convened by the Atlantic Marine Bird Conservation Cooperative. The workshop was designed to bring together entities interested in Atlantic seabirds to begin the development of consistent methods and databases, share ideas on techniques, and help identify and seek increased resources to fill key gaps. The workshop focused on the marine environment and the birds that occur there (i.e., sea ducks, loons, gannets, grebes, tube-noses, etc.). "Bycatch" was one of three main topics addressed at the workshop. The other main topics were "Distribution and Abundance" and "Oil Spills". Teams were organized, and action items were developed at the workshop and its aftermath on the three main topics. The bycatch group, led by Kim Rivera, head of the NOAA Fisheries National Seabird Program, Juneau, Alaska, developed an action plan that focused on the following categories: a) improved and more extensive data analysis to estimate bycatch and identify fishing practices and bird characteristics that influence seabird bycatch; b) improved information obtained by observers, including more specific identification of the birds caught; c) collection of information on bird bycatch throughout the world, population assessments of North Atlantic seabirds, and other key information about WNA seabirds, and development of a "priority species" list; and d) finalization of the FWS Waterbird Bycatch Policy's implementation plan, and e) improved coordination between fishery managers and bird managers. Other elements in the bycatch action plan are development of a "summary threat assessment" for the Atlantic coast; outreach, education, and cooperation with stakeholders; bycatch reduction; increased observer coverage in hotspots (specifically, the Outer Banks of North Carolina); and exploration of a possible Outer Banks National Marine Sanctuary that would include areas in which seabird species diversity, frequency, and relative abundance are exceptionally high. Concept letters were developed for some of these actions,

and new funding is being sought.

2) International: Atlantic bird assessment by the ICCAT SCRS-subcommittee on ecosystems.

The ICCAT sub-committee on ecosystems met in Madrid in February 2007, and seabird bycatch was the central topic. A risk-assessment approach to addressing the potential impact of longline bycatch on seabird populations was proposed. The proposed framework for conducting risk assessments was as follows: 1) identify seabird species most at risk from fishing in the ICCAT Convention Area, 2) collate available data on at-sea distribution of these species, 3) analyze the spatial and temporal overlap between species distribution and ICCAT longline fishing effort, 4) review existing bycatch rate estimates for ICCAT longline fisheries, 5) estimate total annual seabird bycatch (number of birds) in the ICCAT Convention Area, and 6) assess the likely impact of this bycatch on seabird populations. The meeting discussed the general need, Atlantic-wide, for improved information on both seabird bycatch in longline fisheries and seabird population assessments to use as data input to risk assessments. A work plan will be developed.

3) Other: Fishery Ecosystem Management Plans

Birds as part of the fishery ecosystem are being included in the protected species section of the draft Fishery Ecosystem Plan of the South Atlantic Fishery Management Council. Oceanic and coastal shelf species are the major emphasis of bird component of the Plan, shorebirds, waterfowl, wading birds, and marsh birds are also being included. The draft plan will be presented to the Council for approval in November.

Bycatch of Seabirds in Atlantic Tuna, Swordfish, and Shark Longline Fisheries

Highly migratory species, collectively referred to as HMS, are managed by the Secretary of Commerce manages under the Fishery Management Plan for Atlantic Tunas, Swordfish, and Sharks. The HMS FMP includes five species of Atlantic tunas (bluefin, yellowfin, albacore, bigeye, skipjack), swordfish, and 39 species of sharks in the Atlantic Ocean, Gulf of Mexico, and Caribbean Sea. The HMS Management Division assesses seabird bycatch annually in the Stock Assessment and Fishery Evaluation Report for Atlantic HMS.

Description of the Fisheries

Longline fisheries for Atlantic HMS species include the pelagic longline fishery for Atlantic tunas and swordfish and the bottom longline fishery for sharks. Shark longline fisheries include vessels that also fish for grouper and vessels that also fish for tilefish

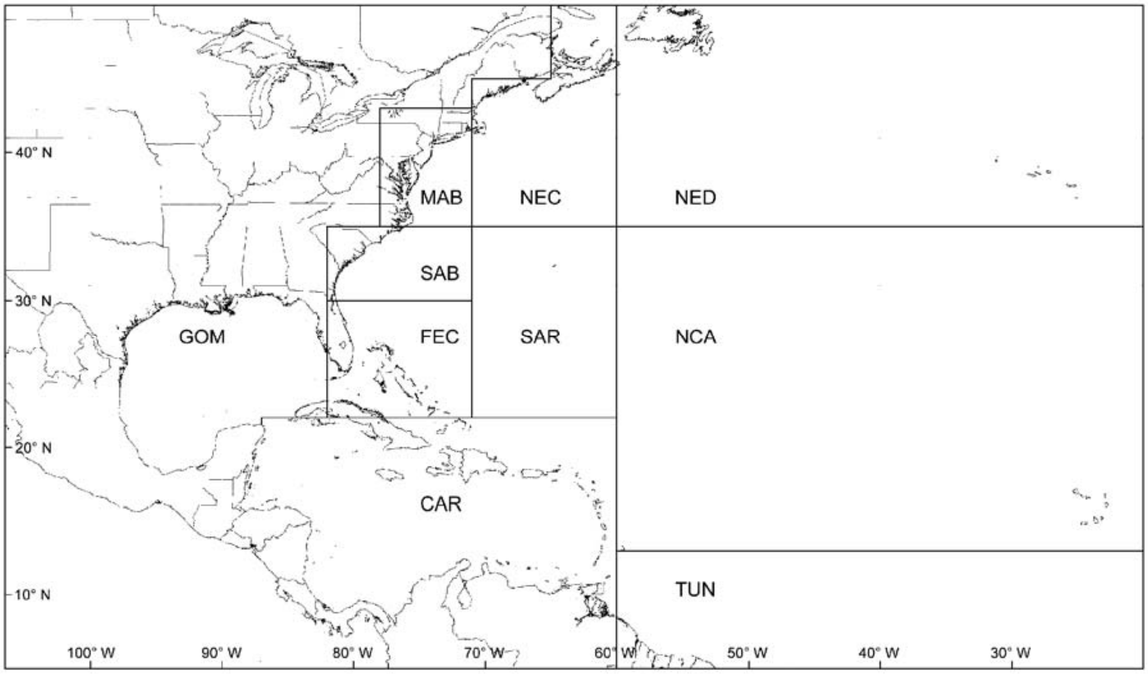

Figure 1. Map indicating National Marine Fisheries Service fishing regions used in analyses of pelagic longline data. The regions illustrated are: Caribbean (CAR), Gulf of Mexico (GOM), Florida East Coast (FEC), Middle Atlantic Bight (MAB), North-Central Atlantic (NCA), Northeast Coastal (NEC), Northeast Distant (NED), Sargasso Sea (SAR), South Atlantic Bight (SAB), and Tuna-North (TUN). The Tuna-South (TUS) region not depicted is south of the TUN.

Commercial pelagic longline fishing occurs throughout the Gulf of Mexico, the entire U.S. Atlantic coast over the continental shelf and slope, and in distant water areas, including the central North Atlantic, the Canadian Grand Banks, and parts of the Caribbean Sea (Figure 1). NMFS observer coverage (by number of sets) covered approximately three to 5 percent annually between 1992 and 2000. Increased sampling in 2001, particularly in the Northeast Distant (NED) area, raised the sampling fraction to over 6 percent. Observer coverage in 2003 outside of the NED experimental fishery was approximately 6.5 percent with 100 percent observer coverage in the NED. From 2004 through 2006, observer coverage continued to grow, reaching 10% in 2005 and 10.4% in 2006. Observers collect information about seabird bycatch by species and also photograph the birds. Beginning in 2004, observers receive training in seabird identification. January 2007 a bird bycatch form was introduced into the POP for use in recording data on each bird caught. The bycatch form requires biological information specific to birds. A data entry form has been prepared for entry of data from the bird form into an ACCESS database. Fishermen are required to submit logbooks for every trip made; however they are not required to report seabird bycatch in logbooks at this time. Garrison (2005) describes the Pelagic Observer Program (POP) and logbook data, as they relate to the incidental take of sea turtles and marine mammals.

The shark bottom longline fishery is active in the Atlantic Ocean from about the Mid-Atlantic Bight to south Florida and throughout the Gulf of Mexico. The bottom longline gear targets large coastal sharks, but small coastal sharks, pelagic sharks, and dogfish species are also caught.

The longline observer programs throughout the Southeast Fisheries Science Center have a consistent data collection protocol. The observer completes three data forms: Longline Gear Characteristic Log, Longline Haul Log, and Individual Animal Log. The Longline Gear Characteristic Log is used to record, for example, the type and length of the mainline used, number and length of gangions, and make and model of hooks used. The Longline Haul Log is used to record the length, location, and time duration for each set and haul-back, as well as environmental information and the type(s) of bait used. The Individual Animal Log records all species caught, condition of the catch (e.g. alive, dead, damaged, or unknown) when brought to the vessel, and the final disposition of the catch (e.g. kept, released, finned, etc.). When an animal is brought onboard the vessel, the observer records the species identification, sex (sharks only) and length information. In the event a protected resource (e.g. seabird, sea turtle or marine mammal) is encountered, the observer is required to fill out additional form(s). If any species identification is questionable, the observer is instructed to take several digital pictures of the specimen in question for further review by SEFSC staff or contracted experts. Data from each trip are submitted to SEFSC staff on a per trip basis. The data are entered and reviewed by SEFSC staff and reviewed with observer contract staff to resolve any questions.

Seabird Bycatch Assessment.

Atlantic pelagic longline fishery

The observed seabird bycatch from 1992 through 2006 was relatively low (Table 1). Since 1992, a total of 135 seabird interactions were observed, with 95 seabirds observed killed (70.45 percent) in the Western North Atlantic pelagic longline fishery. There were 108 active U.S. pelagic longline vessels operating in the Atlantic Ocean, Gulf of Mexico, and Caribbean Sea in 2006. Total logbook effort has been declining consistently from 1996, when there were 16,523 sets, to 2006, when there were only 5,465 sets. The effort was the lowest since 1986, the first year of recorded effort data for this fishery.

Observed bycatch has ranged from 1 to 18 seabirds observed dead per year and 0 to 15 seabirds observed released alive per year from 1992 through 2006. Almost half of the seabirds observed have not been identified (n = 58). However, most of the seabirds have been identified to species beginning in 2004. Of those seabirds identified to family, gulls represent the largest group (n = 32), followed by shearwaters (n = 32). Of those identified to species there were 28 greater shearwaters, 8 northern gannets, and 8 herring gulls (Table 2). The shearwater taxa experienced the highest mortality (87.5 percent), followed by unidentified seabirds (67.24 percent), and gulls (71.88 percent). Northern gannets had the lowest mortality rate (12.5 percent). Table 2 provides greater taxonomic detail on number alive, number dead, and percent dead.

The highest regional number of seabirds observed caught (n = 56) and killed (n = 44; 78.57 percent) was in the Mid Atlantic Bight (MAB) (Table 3). The Northeast Coastal area (NEC) had the second highest number observed caught (n = 43) and a lower mortality (55.81 percent). Fewer birds were observed caught in Northeast Distant and the South Atlantic Bight (n = 17 in both cases), but mortality rates were relatively high (70.59 and 82.35 percent, respectively). Fifteen of the NED birds were reported caught in a special experimental program in which observers covered 100% of the pelagic longline effort. Seabird catches were extremely low in the Gulf of Mexico (GOM) (n=2, 1 killed). No seabird catches were observed in the Caribbean (CAR), Florida East Coast (FEC), North-Central Atlantic (NCA), Sargasso Sea (SAR), Tuna-North (TUN), or Tuna-South (TUS) regions.

Pelagic longline effort (logbook data) is reported for 11 regions for two periods, 1986-1991 and 1992-2006 in Table 4. The regional distribution of effort (indicated by percent effort) varied somewhat between the two periods, the percent in CAR and FEC declining and the percent in GOM, MAB, and SAB increasing. The percent effort in NCA, SAR, TUN, TUS was low during both periods. The decline in percent effort in the FEC was likely due to regulations in effect in recent years. The number of birds reported (Table 6) could potentially be affected not only by the distribution of seabirds relative to longline effort but also by the distribution of observer effort relative to longline effort.

The delta-log normal method described by Yeung (1999), observer data for the period 1992-2004, and logbook data for the period 1992-2006 were used to estimate the bycatch, by species, or species group, and year, from 1992 to 2006 (Tables 7 and 8). As extrapolated, the seabird catch varied substantially among years and was highest in 1997. The extrapolated catch has been relatively low in the past two years. Extrapolations suggest that gulls, followed by shearwaters, were the principal identified (at least to family) group caught. Most of the shearwaters (91%) were dead, 55% of the gulls were dead, and only 18% of the gannets were dead. Something about the behavior or physiology of these birds may determine whether they are released live or dead.

Current Seabird Mitigation Efforts

Management measures recently implemented in the U.S. Atlantic longline fisheries to protect other species may also provide protection for seabirds; however no protective measures have been implemented specifically for seabirds.

Time/area closures for the pelagic longline fishery are in place in the Gulf of Mexico, along the east coast of Florida, in the Charleston Bump, in the Northeast Distant area, and in the Mid-Atlantic Bight. In addition, there is a bottom longline time/area closure off North Carolina, effective from January-June to protect juvenile and adult dusky sharks and juvenile sandbar sharks. Such closures may be reducing the seabird bycatch because of their effect on the geographic distribution of effort. Seabirds are known to concentrate in the area off Cape Hatteras (Lee 1999), (an area that spans the boundary between MAB and SAB). Forty-nine seabird species are known to occur in that area seasonally, and 17, including four rare petrel species may be of some conservation concern (Lee1999). Evidence presented at international workshops has indicated that streamer lines, line-shooters, and other measures can be effective in reducing the bycatch of seabirds in longline fisheries.

Further information on the seabird bycatch of the Western North Atlantic pelagic longline fishery will be available in a manuscript (Hata and Browder) presently in review.

Conclusion

Estimated seabird bycatch in Atlantic HMS pelagic and bottom longline fisheries is small compared to that in other parts of the world, and there does not appear to be a general problem with seabird bycatch in these fisheries. Accordingly, no mitigation measures are proposed at this time. It must be recognized that species-specific problems could exist and not be known. Events so rare in the fishery that they are not likely to be noted might be significant events in a bird population of very small size. Therefore, NMFS intends to continue to collect data on seabird bycatch through observer programs and supplemental logbooks programs and to increase the species-specific identification of seabirds observed. In addition, NMFS will continue to seek opportunities to reduce bird bycatch. NMFS will reassess seabird bycatch in these fisheries as new information becomes available.

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Acknowledgements

Material was retained from the 2005 NWA seabird bycatch by Joseph Desfosse and Karyl Brewster-Geisz, NOAA Fisheries, Highly Migratory Species Management Division. David Hata of Virginia Polytechnical Institute and State University summarized NOAA Fisheries Service POP and logbook data to contribute to this report. Kim Rivera of the NOAA Fisheries National Seabird Program provided valuable advice and support.

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Table 1. **Seabird Bycatch in the U.S. Atlantic Pelagic Longline Fishery, 1992-2006**
Source: NMFS Pelagic longline fishery observer program (POP).

Year	Type of Bird	Status Alive	 Dead
1992	Gull		4
1992	Greater Shearwater		2
1993	Black-backed Gull	1	3
1993	Gull	1	
1993	Northern Gannet	4	
1994	Herring Gull		7
1994	Gull		4
1994	Greater Shearwater		4
1995	Gull	1	
1995	Northern Gannet	2	
1995	Storm Petrel		1
1995	Seabird		6
1997	Seabird	15	18
1998	Seabird		8
1999	Seabird		1
2000	Laughing Gull	1	
2000	Northern Gannet		1
2001	Greater Shearwater		8
2001	Seabird		1
2002	Laughing Gull		1
2002	Gull	6	1
2002	Northern Gannet	1	
2002	Greater Shearwater	1	4
2002	Shearwater		2
2002	Seabird	3	2
2003	Seabird	1	2
2004	Gull		5
2004	Greater Shearwater	1	4
2004	Seabird		1
2005	Herring Gull		1
2005	Cory's Shearwater		1
2005	Greater Shearwater	1	1
2006	Greater Shearwater		2
2006	Shearwater	1	
	Total	40	95

MAB - Mid Atlantic Bight, SAB - South Atlantic Bight, NEC - Northeast Coastal, GOM - Gulf of Mexico, NED - Northeast Distant

Note: This tabulation includes the 15 birds (5 alive, 10 dead) caught in the NED Experiment, 2001-2003 (Watson et al. 2005).

Table 2. **Status of Seabird Bycatch in the U.S. Atlantic Pelagic Longline Fishery, 1992-2006.** Source: NMFS Pelagic longline fishery observer program (POP).

Species	Release Status		Total	Percent Dead
	Dead	Alive		
Greater shearwater	25	3	28	89.29
Cory's shearwater	1		1	100.00
Unidentified shearwater	2	1	3	66.67
Herring Gull	8		8	100.00
Great black-backed Gull	3	1	4	75.00
Laughing Gull	1	1	2	50.00
Unidentified gull	14	8	22	63.64
Northern Gannet	1	7	8	12.50
Storm Petrel	1		1	100.00
Unidentified seabird	39	19	58	67.24
Grand Total	95	40	135	70.37

Note: This table includes the 15 birds total, 10 dead) of the 2001-2003 NED Experiment (Watson et al. 2005).

Table 3. **Seabird bycatch in the U.S. Atlantic Pelagic Longline Fishery by area, 1992-2005.** Source: NMFS Pelagic longline fishery observer program (POP).

Region	All	Dead	Percent dead
CAR	0	0	
FEC	0	0	
GOM	2	1	50.00
MAB	56	44	78.57
NCA	0	0	
NEC	43	24	55.81
NED	17	12	70.59
SAB	17	14	82.35
SAR	0	0	
TUN	0	0	
TUS	0	0	
Total	135	95	70.37

Note: This table includes the 15 birds total, 10 dead) of the 2001-2003 NED Experiment (Watson et al. 2005).

Table 4. ***Pelagic longline effort (number of sets), 1986-1991, 1992-2006, and total period, as number and percent in each region.***

Region	Number of sets		Percent of total	
	Period		Period	
	1986-1991	1992-2006	1986-1991	1992-2006
CAR	8,806	9,743	10.11	5.27
FEC	19,124	23,653	21.96	12.80
GOM	26,464	66,015	30.39	35.72
MAB	10,670	28,473	12.25	15.41
NCA	445	4,554	0.51	2.46
NEC	7,788	14,271	8.94	7.72
NED	6,928	9,995	7.96	5.41
SAB	5,395	20,314	6.20	10.99
SAR	308	1,707	0.35	0.92
TUN	582	2,097	0.67	1.13
TUS	174	1,433	0.20	0.78
UNK	397	2,551	0.46	1.38
Total	87,081	184,806	100.00	100.00

Note: This table includes the observed effort (1,225 sets) of the 2001-2003 NED Experiment (Watson et al. 2005)

Table 5. ***Observer coverage in relation to pelagic longline effort (sets), by region, 1992-2006, without and with NED Experiment of 2001-2003, in which observers covered 100% of effort.***

Region	Logbook sets (w/o NED 2001-2003)	Observed sets		Logbook sets (incl NED 2001-2003)	Observed sets	
		Number	Percent		Number	Percent
CAR	9,743	262	2.69	9,743	262	2.69
FEC	23,653	781	3.30	23,653	781	3.30
GOM	66,015	3,024	4.58	66,015	3,024	4.58
MAB	28,473	1,234	4.33	28,473	1,234	4.33
NCA	4,554	330	7.25	4,554	330	7.25
NEC	14,271	591	4.14	14,271	591	4.14
NED	8,770	550	6.27	9,995	1,775	17.76
SAB	20,314	872	4.29	20,314	872	4.29
SAR	1,707	102	5.98	1,707	102	5.98
TUN	2,097	43	2.05	2,097	43	2.05
TUS	1,433	35	2.44	1,433	35	2.44
UNK	2,551	0	0.00	2,551	0	0.00
Total	183,581	7,824	4.26	184,806	9,049	4.90

Note: In the NED Experiment, 2001-2003, observers covered 100% of effort, 1,225 sets.

Table 6. **Observed seabird catch rate in the U.S. Atlantic pelagic longline fishery, 1992-2005 (excluding the NED experiment of 2001-2003, in which coverage was 100%, differing from the rest of Pelagic Observer Program).**

			Number of seabirds		Number of occurrences		Catch rate	
Year	Sets	Hooks	All	Dead	All	Dead	per set	per 1000 hooks
1992	329	194,706	6	6	1	1	0.018	0.031
1993	817	526,501	9	3	5	2	0.011	0.017
1994	650	411,996	15	15	6	6	0.023	0.036
1995	686	472,105	10	7	6	5	0.015	0.021
1996	356	220,223	0	0	0	0	0	0
1997	451	311,520	33	18	11	8	0.073	0.106
1998	287	175,408	8	8	2	2	0.028	0.046
1999	424	285,083	1	1	1	1	0.002	0.004
2000	465	312,574	2	1	2	1	0.004	0.006
2001	398	284,198	8	8	4	4	0.02	0.028
2002	344	260,632	8	2	5	2	0.023	0.031
2003	551	427,575	2	1	2	1	0.004	0.005
2004	702	524,182	11	10	6	5	0.016	0.021
2005	796	577,354	4	3	3	2	0.005	0.007
2006	568	419,233	3	2	3	2	0.005	0.007
Total	7824	5,403,290	120	85	57	42	0.015	0.022

Table 7. **Expanded estimates of seabird bycatch (alive and dead) in the U.S. Atlantic pelagic longline fishery, 1986-2006.**.

Taxa	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Ave.
Gulls	160	84	199	24					22		248		77	8		47
Gannets		83		48					22							11
Seabirds				140		1 109	380	28			36	39	6			124
Shearwaters	80		74							283			75	31	27	35
Storm-petrels				24												2
All	240	167	273	236	0	1,109	380	28	44	283	284	39	158	39	27	219

Table 8. **Expanded estimates of dead seabird bycatch in the U.S. Atlantic pelagic longline fishery, 1986-2006.**

Taxa	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Ave.
Gulls	160	50	199	0					0		36		77	8		26
Gannets		0		0					22							2
Seabirds				140		623	380	28			36	20	6			88
Shearwaters	80		74							283			61	19	16	32
Storm-petrels				24												2
All	240	50	273	164	0	623	380	28	22	283	72	20	144	27	16	150