ANNUAL REPORT OF THE UNITED STATES OF AMERICA

U.S. Department of Commerce, NOAA Fisheries

Part I

Section 1: Annual Fisheries Information

Total (preliminary) reported U.S. catch of tuna and tuna-like fishes (including swordfish, but excluding other billfishes) in 2004 was 25,824 MT, a decrease of about 5 % from 27,353 MT in 2003. Estimated swordfish catch (including estimated dead discards) decreased 136 MT to 2,685 MT, and provisional landings from the U.S. fishery for yellowfin in the Gulf of Mexico decreased in 2004 to 2,079 MT from 2,527 MT in 2003. The estimated 2004 Gulf of Mexico landings of yellowfin tuna accounted for about 32% of the estimated total U.S. yellowfin landings in 2004. U.S. vessels fishing in the northwest Atlantic landed in 2004 an estimated 973 MT of bluefin, a decrease of 441 MT compared to 2003. Provisional skipjack landings increased by 24 MT to 102 MT from 2003 to 2004, estimated bigeye landings decreased by 69 MT compared in 2003 to an estimated 414 MT in 2004, and estimated albacore landings increased from 2003 to 2004 by 200 MT to 449 MT.

Section 2: Research and Statistics

In addition to monitoring landings and size of swordfish, bluefin tuna, yellowfin tuna, billfish, and other large pelagic species through continued port and tournament sampling, logbook and dealer reporting procedures, and scientific observer sampling of the U.S. fleet, major research activities in 2003 and 2004 focused on several items. Research on development of methodologies to determine the genetic discreteness of large pelagic fishes in the Atlantic was continued, as were larval surveys for bluefin tuna and other large pelagics in the Gulf of Mexico. Research on development of robust estimation techniques for population analyses and on approaches for characterization of uncertainty in assessments and methods for translating that uncertainty into risk levels associated with alternative management approaches was further conducted. U.S. scientists also continued to coordinate efforts for the ICCAT Enhanced Research Program for Billfish and for the Bluefin Year Program. Participants in the Southeast Fisheries Science Center's Cooperative Tagging Center (CTC) and the Billfish Foundation tagging program tagged and released, 3,800 billfishes (swordfish, marlins, sailfish, and spearfish) and 1,796 tunas in 2004. This represents a decrease of 21.3% for billfish and a 195.5% increase for tunas from 2003 levels. Electronic tagging studies of bluefin tuna and of marlins were substantially enhanced. Cooperative research was conducted with scientists from other nations on development of assessment methodologies, on biological investigations and on development of indices of abundance for species of concern to ICCAT.

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 decreased to 6,500 MT in 2004, from the 2003 landings estimate of 7,702 MT (Appendix Table 2.1-YFT). The 2004 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 (3,434 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 from 78 MT in 2003 to 102 MT in 2004 (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 2004 decreased by 69 MT from 483 MT in 2003 to 414 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. 2004 provisional estimated landings and discards from the northwest Atlantic (including the Gulf of Mexico) were 899 MT and 71 MT, respectively. Those estimated landings and discards represent a decrease of 509 MT from the 2003 estimates. The 2004 landings by gear were: 32 MT by purse seine, 41 MT by harpoon, 1 MT by handline, 180 MT by longline (including discards) of which 103 MT were from the Gulf of Mexico, 716 MT by rod and reel.

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 2004 rod and reel fishery off the northeastern U.S. (including the North Carolina winter fishery) for landings in several size categories were 264 fish < 66 cm, 10,193 fish 66-114 cm, 3,414 fish 115-144 cm and 634 fish 145-177 cm (an estimated 1.5, 198, 142, and 49 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 is shown in Appendix Figure 2.1-ALB. Estimated total catches of albacore were 646 MT in 2004, an increase of 197 MT from 2002 (Appendix Table 2.2-ALB).

2.1.3 Swordfish Fishery Statistics

For 2004 the provisional estimate of U.S. vessel landings and dead discards of swordfish was 2,684 MT (Appendix Table 2.3-SWO). This estimate is lower than the estimate of 2,821 MT for 2003. The provisional landings, excluding discard estimates, by ICCAT area for 2004 (compared to 2003) were: 430MT (441 MT) from the Gulf of Mexico (Area 91); 1,042 MT (1,195MT) from the northwest Atlantic (Area 92); 279 MT (273 MT) from the Caribbean Sea (Area 93); and 591 MT (613 MT) from the North Central Atlantic (Area 94A), and 15 MT (20 MT) from the SW Atlantic (Area 96).

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 5% of the longline fleet-wide fishing effort is randomly selected for observation during the fishing year. In the past few years, the target sampling coverage has been elevated to 8%. The observer sampling data, in combination with logbook reported effort levels, support estimates of approximately 21,443 fish discarded dead in 2004. For the North Atlantic, the estimated tonnage discarded dead in 2004 is271 MT, of which 266 is estimated due to longline gear. Overall, the estimates of dead discarded catch slightly decreased by 11 MT compared to the 2003 level, but remained about 12% of the landed catch.

Total weight of swordfish sampled for sizing U.S. landings by longline, otter trawl, and handline was 2,251 MT, 2.8 MT, and 17.8 MT in 2004. The weight of sampled swordfish landings in 2004 were 98%, 37%, and 89% of the U.S. total reported annual landings of swordfish for longline, trawl, and handline. Again, incorporation of late reports into the estimated 2004 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 1996-2004.

2.1.4 Marlins and Sailfish Fishery Statistics

Due to concerns over estimates of rod and reel catches and landings of marlins, estimates for 2002 and 2003 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. As sufficient data are not yet available to address the estimation method issues raised, 2004 estimates of rod and reel landings of marlins are based on direct observations of landed fish. Removals from recreational fishing tournaments monitored through the Recreational Billfish Survey (RBS) represent a portion of total removals and thus represent an underestimate of total removals by recreational anglers. Removals based solely on RBS will not be adequate for stock assessments, which must consider all removals. Estimates, which take this feature into account, will be available for the next stock assessment of these species.

The estimates of 2004 U.S. rod and reel landings from the RBS for blue and white marlins were 24 MT and 0.8 MT, respectively. The estimated 2004 rod and reel landings of sailfish were 33 MT.

Estimates of the billfish by-catch discarded dead in the U.S. commercial longline and other commercial fisheries for 2004 were 34 MT for blue marlin, 27 MT for white marlin, and 7 MT for sailfish. The estimated 2003 U.S. discarded dead bycatch was 19 MT, 17 MT, and 5 MT, respectively for the three species.

2.1.5 Mackerels Fishery Statistics

Significant catches of king and Spanish mackerels by U.S. fishermen have occurred since the 1850's for Spanish mackerel and since the 1880's for king mackerel. The major gears currently exploiting these species are handlines and gillnets. Purse seines were also used to harvest king mackerel during the 1980's. Gillnets have historically been the main commercial gear for Spanish mackerel, however, in recent years recreational removals have become an important component in total catches for both species. The majority of king mackerel catches are taken off North Carolina and Florida and it is believed that a major production area off Louisiana is recovering. The primary Spanish mackerel catch areas include the Chesapeake Bay and Florida. Current fisheries are co-managed under the Coastal Migratory Pelagic Resources FMP enacted in 1983 and regulations adopted by the South Atlantic and Gulf of Mexico Fishery Management Council and implemented by NMFS. Annual catches are monitored closely by NMFS and within season management measures include commercial trip limits, size limits, seasonal and area quotas, and recreational per person daily bag limits. Because these species occur in both federal and state territorial zones of U.S., successful management has required participation by both federal and state management agencies. At present, none of the King or Spanish mackerel stocks are considered overfished.

Annual yields of king mackerel have ranged from 4,365 MT to 8,772 MT between 1983 and 2004 with an average production of about 7,000 MT since 1995. Annual catches of Spanish mackerel have ranged from 2,784 MT to 5,957 MT from 1983 to 2003 with the average catch of about 4,500 MT since 1995. Reported 2003 U.S. catches of king mackerel and spanish mackerel are preliminary. The reported landings of king mackerel and spanish mackerel were 6,983 MT and 4,6111, respectively.

Harvest of both species has stabilized in recent years although large fluctuations in estimates of recreational catches in some years have occurred and overages in commercial landings and recreational quotas can occur. The stabilization in yields is thought to be the direct impact of regulations, which have been implemented in an effort to sustain future production. The primary management factors contributing to fluctuations in annual recreational harvests include difficulties of enforcement of differential bag limits imposed in individual states, large inter-annual variances in recreational harvest estimates, and regulations that permit the sale of king mackerel from recreational charter boats after the closure of commercial fisheries.

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. These regulations were implemented in 1999 and have been in effect since then. Presently, the commercial quotas for pelagic sharks (and other species groups) are split equally between three trimester seasons.

Landings of sharks by US 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 2003 (although some of the data for 2003 are preliminary and subject to change). Commercial landings of pelagic sharks in weight steadily increased from the early 1980's, peaked in 1996, declined the next three years, and show an increasing since 1999 (Appendix Table 2.6a-SHK). Recreational landings in numbers estimated from the MRFSS survey during 1981-2003 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 (Appendix Table 2.6a-SHK). Pelagic longline dead discards also fluctuated between 1987 and 2003, but generally declined from a maximum of 30,500 fish in 1993 to a minimum of about 3,500 fish in 1999. Total catches ranged from about 12,500 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 about 500 fish in 1994 and 1995 to over 20,000 fish in 1987. Pelagic longline discards reached 29,000 fish in 1993, but otherwise oscillated between a minimum of about 2,800 fish in 1999 to a maximum of about 19,000 fish in 1996 (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 7,000 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 5,000 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. Only for thresher shark, did total landings exceed 1,000 fish for more than one year in a row.

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 2004 and 2005. 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. During the 2004 U.S. ichthyoplankton survey, a plankton net of a type used in the Spanish surveys was fished in addition to the nets normally used to determine the impact of using a wider net mouth and larger mesh on the size and catch rates of bluefin in the Gulf of Mexico. The results of this work will be reported as they become available. US scientists also collaborated in development of the larval working group agenda for the CLIOTOP program.

Since 1998, researchers from Texas A & M University and the University of Maryland with assistance of researchers from Canada, Europe, and Japan have studied the feasibility of using otolith chemical composition (microconstituents and isotopes) to distinguish bluefin stocks. Recent research has investigated the value of using additional microconstituent elements (transitional metals) to enhance classification success. By themselves the transitional metals provided little discriminatory power, but when combined with the other trace elements (for 13 elements in all), the classification success for several year-classes has been moderate ranging from 60-90%, and classification functions show strong year-to-year variability. In SCRS/2005/083 the utility of an alternative chemical marker in otoliths, carbon and oxygen stable isotopes, to discriminate bluefin tuna from natal regions was reported upon. The discriminatory power of stable isotopes ($\delta^{13}C$, $\delta^{18}O$) in otoliths of yearlings (age-1) was high, with 91% of individuals classified correctly to eastern and western nurseries. These stable isotopes and in particular $\delta^{18}O$ can be used to reliably predict nursery origin of Atlantic bluefin tuna. An initial application compared otolith core material (corresponding to the first year of life) of large school, medium, and giant category bluefin tuna to reference samples of yearling signatures to determine their origin. A large fraction (~43-64%) of the Atlantic bluefin tuna collected in the western Atlantic fishery (comprised primarily of large school and medium category fish) originated from nurseries in the east. Alternatively, medium and giant category bluefin tuna from the Mediterranean were largely (~82-86%) of eastern origin. Thus, initial evidence suggests that the western fishery received high input from the Mediterranean population.

Scientists from the University of Maryland, Virginia Institute of Marine Science and Texas A&M University have continued to sample specimens for genetic and otolith chemistry studies of stock structure. Roughly 10-20 young of the year were collected in 2004. In addition limited sampling of ages 1 and older continues. Efforts are also continuing to obtain samples from juveniles and mature bluefin from the Mediterranean Sea and adjacent waters.

In response to the ICCAT Commission's request for options for alternative approaches for managing mixed populations of Atlantic bluefin tuna SCRS/2005/108 further examined some implications of incorporating electronic tagging information on transfer rates into virtual population analyses. SCRS/2005/084 examined yield and spawner per recruit consequences of different assumed levels of mixing between eastern and western bluefin stocks to provide guidance to the Commission as requested at the 3rd Meeting of Working Group to Develop Coordinated and Integrated Bluefin Tuna Management Strategies. Researchers at the Imperial College, London, continue work with the University of Miami, the University of New Hampshire and the National Marine Fisheries Service to develop methods to estimate bluefin movement and fishing mortality rate patterns (SCRS/2005/048). Operating models are being developed which will use conventional and electronic tagging data and fishing effort by management area. These models will be used to examine possible harvest control rules and the evaluation of possible management procedures.

US scientists from Stanford and Duke University along with the Monterey Bay Aquarium and National Marine Fisheries Service have placed over 700 electronic tags in bluefin tuna in the region along the US coast of North Carolina. The data from implantable archival tags has been critical for establishing the basic biology of Atlantic bluefin and the patterns of movements to feeding and breeding grounds. Results from a large number of these tags were interpreted in a paper in the journal Nature this year (Block *et al.* 2005. Nature 434: 1121-1127. Electronic tagging and population structure of Atlantic Bluefin Tuna). Tagging off the Carolinas, in the Gulf of Maine, and elsewhere continued in 2004 and 2005. Of the more than 90 tags placed in fish off the Carolinas in 2005. The tags are due to report 7-9 months from the deployment dates- and will be further reported upon as results become available.

US scientist from the University of New Hampshire have placed over 200 pop-up satellite archival tags have on New England blue fin tuna. Ongoing efforts include examining short and long-term dispersals of blue fin in the Gulf of Maine, the identification of spawning grounds, the spatial correlation between blue fin locations and oceanographic features and continuing to determine Atlantic-wide migratory paths. Results from much of this tagging effort was recently published in the journal Marine Biology (Wilson, *et.al.* 2005. Movements of bluefin tuna (*Thunnus thynnus*) in the northwestern Atlantic Ocean recorded by pop-up satellite archival tags. Marine Biology 146: 409- 423.)

A new research initiative in 2005, involving scientist from the University of New Hampshire, the Virginia Institute of Marine Science and Virginia SeaGrant will place electronic tags on juvenile bluefin from off the US coast of Virginia. As results become available they will be reported upon.

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 from that analysis for the 2005 SCRS. Estimates of small swordfish bycatch for 2002-2004 were compared to the average levels estimated for the late 1990's and were found to be substantially lower (see Appendix).

Fisher reported and observed swordfish catch, size and catch rate patterns through 2004 were examined in support of monitoring the recovery of north Atlantic swordfish. Standardized indices of abundance were updated for the Western North Atlantic using data from the U.S. pelagic longline fleet (SCRS/2005/085).

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.

US scientists collaborated with Brazilian scientists in conduct of catch rate standardization procedures by offering a course on the topic in Brazil in mid-2005. 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 US.

Research on measures to mitigate the interactions between pelagic longline and bycatch of marine turtles continued under a cooperative research program involving the US Atlantic pelagic longline fishery. The Northeast Distant Fishery Experiment was conducted from 2001 through 2003 on the high seas of the Western Atlantic Ocean, in an area off New Foundland known as the Grand Banks. Results of this research into reducing mortality of marine turtles interacting with pelagic longlines was recently published (Watson, *et.al.* 2005. Fishing methods to reduce sea turtle mortality associated with pelagic longlines. Can. J. Fish. Aquat. Sci.. 62(5): 965-981). Additional cooperative research in the Gulf of Mexico was carried out in 2004 and in additional regions in 2005. Results of these research projects will be reported to SCRS as they become available.

2.2.3 *Tropical Tunas Research*

In addition to monitoring catch and effort statistics for tropical tunas, 4 US scientists participated in the 2005 ICCAT Workshop on Methods to Reduce Mortality of Juvenile Tropical Tunas, held in Madrid from 4-8 July 2005. Document SCRS/2005/063 used the ICCAT Task 2 catch and effort data to estimate expected changes in the catches of tropical tunas attributable to replacing the current moratorium with a time-area closure [Recommendation 04-01]. The results indicate that catches of tropical tunas are expected to increase substantially if the time-area closure replaces the current moratorium. Considering that the current ICCAT hypothesis is that purse-seine fleet efficiency gains 3% per year, the net change could in fact be a large overall increase to levels above the pre-moratoria fishing mortality rate levels. SCRS/2005/079 explored the expectations for catches of undersized bigeye tuna considering the agreement reached in [04-01]. In all cases examined, total catches can be expected to increase from 5.5 to 6.7% as a result of [04-01], and catches of BET can be expected to increase from 16-22.1%. In all cases, catch of juvenile bigeye tuna increases.

US scientists from the University of Miami's Rosenstiel School of Marine and Atmospheric Science continue to collaborate with EC scientists on the EU-funded FEMS project, on management strategy evaluations related to tropical tuna fisheries.

2.2.4 Albacore Research

US scientists prepared document SCRS/2005/081 which described population models for North Pacific albacore (*Thunnus alalunga*) that have been developed and reviewed within the North Pacific Albacore Workshop (NPALBW) forum since 2000. Currently, the NPALBW relies on a Virtual Population Analysis (VPA) model for purposes of formulating an international-based consensus regarding the 'status' of this fish stock. Recently, an equally important research directive from the Workshop 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). We have developed one candidate model based on the Age-structured Assessment Program (ASAP), which generally represents a maximum likelihood-based numerical approach for conducting relatively straightforward, forward-simulation catch-at-age analyses. In addition the document presents a brief discussion concerning development of other alternative stock assessment models, particularly length-based/age-structured platforms (e.g., MULTIFAN-CL and Stock Synthesis 2).

2.2.5 Mackerels and Small Tunas Research

U.S. small tuna research is directed mainly on king and Spanish mackerel stocks, as the amount landed of other small tunas such as cero mackerels by U.S. fishermen is generally low. The focus of research is collection of primary fishery catch statistics, and biostatistical sample data, fishery age samples, and abundance indices. Critical research areas regarding mackerels relate to the adequacy of sampling of the age structure of the stocks, the amount of mixing between management units, and increasing the precision associated with the mackerel assessment abundance indices. Because assessment and management are by necessity by geographical units, continued research on migration of king mackerel in particular is important. An updated assessment of king and Spanish mackerel stock status was recently completed, including evaluations of stock status under various hypotheses about interchange rates between Gulf of Mexico and US Atlantic migratory groups. The results of the assessment were used to advise the Gulf and South Atlantic Fishery Management Councils on biologically appropriate harvest levels corresponding with the Councils' objectives for sustainable harvest.

In 2004 and 2005, US scientists collaborated with Caribbean nations under the banner of the Caribbean Regional Fisheries Mechanism in initiating stock assessment analyses for small tuna (and other) stocks of mutual concern.

2.2.6. Shark Research

The ICCAT Sub-Committee on Bycatches conducted an assessment of blue sharks and shortfin makos in Tokyo, Japan, in June 2004. US scientists contributed 8 working documents for this meeting on various aspects of shark biology and methods to assess stock status.

In response to a Commission request, document SCRS/2005/086 provided an evaluation of the validity of the continued use of the 5% fin weight to carcass weight ratio using available data from various fishery-independent and fishery-dependent sources. The fin to carcass ratio is highly variable, depending on species, fin set, and finning procedure. If species-specific management is not feasible, the available data suggest that the aggregated 5% ratio is not inappropriate when using the primary fin set in the calculations. In all, the only guaranteed method to avoid shark finning is to land sharks with all fins attached.

A cooperative shark research project between Brazil (Universidade Federal Rural de Pernambuco) and the US (NOAA Fisheries and the University of Florida's Florida Museum of Natural History) is being developed. 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 US.

2.2.7. *Billfish Research*

The NMFS SEFSC again played a substantial role in the ICCAT Enhanced Research Program for Billfish in 2004, with SEFSC scientists acting as general coordinator and coordinator for the western Atlantic Ocean. Major accomplishments in the western Atlantic in 2004 were documented in SCRS/04/028. Highlights include 11 at-sea sampling with observers on Venezuelan industrial longline vessels in September 2004. Of the trips accomplished to date, 4 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 2004 sampling season. 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 2004; a total of 44 tag recovered billfish and sharks were submitted to the Program Coordinator in 2004. Age, growth, and reproductive samples from several very large billfish were obtained during 2004.

A study conducted by the Virginia Institute of Marine Science (VIMS) to evaluate post release survival and habitat use from the recreational fishery for Atlantic white marlin using pop-up satellite archival tags (PSATs) was finalized in 2004 and published in the peer review literature.

A separate study conducted by VIMS on U.S. longline vessels to evaluate post release survival of marlin, as well as evaluating hook performance and related mortality was also finalized in 2004. These data have been submitted to a peer journal and are currently under review. The SEFSC has conducted several studies in the Northwest Atlantic and the Pacific coast of Central America to evaluate habitat use and reproductive biology of billfish using PSAT technology. About 200 PSATs have been deployed in this effort over the last 4 years with deployments ranging from a month to 5.5 months. Several peer review papers summarizing these results are in press this time, while other papers are currently in preparation. In addition, SEFSC is also currently conducting pelagic longline research to evaluate gear behavior, and the effects of gear modification on catch rate and survival of target and non-target species. Three cruises have been completed to date. This work in ongoing and should be finished sometime in 2006.

Cooperative billfish research between US and Brazilian scientists was initiated in 2005. Results of that research will be presented to SCRS when it becomes available.

The Fishery Management Group of the University of Miami is carrying out research on Atlantic billfish on 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.

Document SCRS/2005/31 presented an update of standardized CPUE for blue and white marlin from the US LL fishery in the NW Atlantic and Gulf of Mexico. Regarding the treatment of Area in the model, the authors explained that all areas were treated equally independent of the size of the area.

Document SCRS/2005/30 presented an update of standardized CPUE for blue and white marlin from the US recreational tournament fishery in the NW Atlantic and Gulf of Mexico. During discussion, there were questions about the merging of statistics from different sources (the Recreational Billfish Survey used in the analyses and other more general fishery surveys). It was noted that there is an ongoing review of the estimation of marlin fishery statistics and that this work will be finalized by the next stock assessment.

Document SCRS/2005/25 presented standardized CPUE for blue and white marlin from the Venezuelan LL fishery in the western central Atlantic and off the Caribbean Sea. During discussion, it was noted that there is little overlap between the Venezuelan and Brazilian LL fisheries because they operate in similar longitudes but different latitudes.

SCRS/2005/26 presented standardized catch rates for blue marlin and white marlin for the Venezuelan artisanal gillnet fleet fishing in what is considered a billfish 'hot spot'. Estimations were obtained from port sampling data collected by the Enhanced Billfish Research Project in Venezuela for the period of 1991-2004.

Document SCRS/2005/029 attempted to measure the hook depth of longline sets made off the Windward Passage during an experimental cruise in 2003. The gear configuration used was four hooks between floats, a shallow deployment scheme. Results indicated prediction of gear depth with Temperature Depth Recorders (TDRs) using this configuration in this location was difficult (no differences in hook depth were observed). Major causes of variations of set hook depth among baskets are change of shortening ratio and hooking of fishes, which should be introduced into the current simulation model.

Document SCRS/2005/034 provided data on vertical habitat use of white marlin in numerous locations of the western North Atlantic using PSAT tags. Most of these deployments were very short (5 to 10 days) as the primary objective was to determine post release survival. However, these data indicated that white marlin use more of the vertical habitat than previously thought, making numerous deep dives to and below the thermocline during the tracks, implying that white marlin are feeding in the mid and deep layers as well as in the surface layer.

Document SCRS/2005/035 characterized the depth distributions of 52 blue marlin in relation to exposure to longline gear using PSAT tags. The actual depths explored varied greatly because the depth of the thermocline varied by area and season. The fractions of time spent by each fish within each degree of water temperature relative to the temperature of the surface mixed layer resulted in highly variable results. The paper recommended that simulations be drawn randomly from the observed frequency distributions to simulate interactions between fish and hooks on longline sets. Blue marlin often made deep, short duration dives that took them into relatively cold environments (less than 10º C) and this indicated a much greatly use of the vertical water column than previously reported.

Document SCRS/2005/037 presented a quantitative framework and numerical method for characterizing vertical habitat use by large pelagic animals using pop-up satellite tag data. The method, termed vertical habitat envelopes, was tested and validated using archived data from a recovered PSAT tag, as well as transmitted data from the same tag. There were virtually no differences in the habitat envelopes computed from these two sources and it was concluded that the method works well for transmitted PSAT data. The method consolidates time at depth and time at temperature matrices while computing a three-dimensional representation of vertical habitat use.

In document SCRS/2005/033, pop-up satellite archival tags (PSATs) were deployed on white marlin caught on pelagic longline gear for periods of 5 - 43 days. Twenty of 28 (71.4%) tags transmitted data at the pre-programmed time and transmitted data from 17 of 19 tags were consistent with survival for the duration of the tag deployment. Estimates of post-release survival ranged from 63.0% (assuming that all non-reporting tags were mortalities) to 89.5% (excluding non-reporting tags from the analysis). The authors concluded that white marlin can generally survive the trauma of capture on longline gear and suggests that current management measures requiring the release of live white marlin will reduce fishing mortality on the stock.

Document SCRS/2005/044 reported that anal fin spines are being collected from blue and white marlin along with basic biological information from artisanal and commercial fishing fleets on both sides of the Atlantic as well as in the Caribbean. Ages are being estimated from anal fin spine sections using relative marginal increment analysis. The validation of the age estimates may prove to be problematic.

Document SCRS/2005/039 reported that seven white marlin and one blue marlin were tagged with PSAT tags off the eastern end of Hispanola, Dominican Republic. Larval sampling was conducted in the same area in which tagging took place in order to determine if spawning was occurring. Seven of the PSAT tags reported data for periods ranging from 28 to 40 days. Movements ranged from 32 to 268 nautical miles. Average movements appeared constrained in comparison to other marlin PSAT tagging studies. A total of 18 istiophorid larvae were collected including eight white marlin, four blue marlin and six, which could not be identified to species. This finding confirmed that there was spawning occurring in the area. In addition, ovarian sections from one white marlin contained histological features, which indicated recent and imminent spawning. It is speculated that the constrained movement patterns may be associated with spawning activity in the area.

Document SCRS/2005/032 presented the CPUE simulator developed in response to the 2003 Methods working group recommendations. The intention was to develop a simulated CPUE data set similar to the Japanese longline CPUE data set but with a known true abundance trend, so that the GLM and habitat-based methods to standardize CPUE could be compared. The simulator integrates species distributions with longline hook distributions by latitude, longitude, depth, year and month, to produce catch per set of white marlin, blue marlin and four target species. The spatial distribution of longline sets by month is based on the distribution of the Japanese longline fleet in the Atlantic from 1956 through 1995. The depth distribution of blue and white marlin were predicted from an assumed habitat preference for temperatures relative to that in the surface mixed layer (Delta T). The stocks were assumed to be either stable or declined with time. The spatial distribution was either uniform or proportional to the long-term average CPUE of each species in longline sets in the ICCAT data time series. The simulator has all of the capabilities requested by the Methods WG, but it has not yet been used to predict bigeye tuna CPUEs due to lack of data about habitat use by bigeye tuna. The simulated CPUE recreates many of the characteristics of the Japanese longline fishery CPUE data. In particular, the unstandardized simulated CPUEs of blue and white marlin overestimate the true decline in abundance from 1975 onward, during the period when the Japanese longline fishery was shifting to deeper sets. During discussion, it was suggested to simulate CPUE data based on the Chinese Taipei longline fishery as well, because Chinese Taipei has also shifted from shallow fishing to deep fishing in recent years. This would require Chinese Taipei scientists to provide detailed set-by-set information about gear configurations in this fishery, and the range of hook depths for each gear configuration.

Document SCRS/2005/27 applied several GLM-based standardization methods to the data simulated in SCRS/2005/32, and compared the standardized indices to the known biomass trends. Habitat-based methods were not applied. The standardization methods were a classical GLM assuming a normal distribution of the log transformed nominal CPUE values by set, a delta-Poisson GLM applied to the set by set data, and a delta-lognormal GLM applied to data aggregated by 5º latitude and longitude squares. For both blue and white marlin, for all four distribution and biomass trend scenarios, the GLM-standardized CPUE series were similar to the nominal CPUE trends. The GLM methods failed to capture the true biomass trend. Also, the nominal CPUEs and the GLM standardized indices showed a decrease between 1970 and 1971 which could not be explained by the hooks per basket (HPB) factor which was used as a proxy for depth of fishing, because HPB did not begin to increase until 1975. When the data were analyzed separately for 1956 to 1974 and 1975 to 1995, the GLM standardized indices were similar to the true biomass trend, except for the period from 1971 to 1974, implying that the discrepancy in 1971 has not yet been explained.

Document SCRS/2005/28 presented a prototype assessment of white marlin, which incorporated either a GLM-based or a habitat-based standardization of CPUE data into the population dynamics model used in assessment. Usually during a stock assessment, CPUE data are standardized to produce an annual index of abundance, and then a population dynamics model is fitted to this index of abundance. Integrating CPUE standardization into the assessment model has been advocated as a way to more accurately characterize the uncertainty in CPUE as a measure of abundance. The method was implemented with the WinBUGS Bayesian statistical software, and applied to the simulated data from SCRS/2005/032.

Document SCRS/2005/077 pointed out that the ICCAT Working Group on Assessment Methods recommended that CPUE standardization methods for the Japanese longline time series be evaluated against simulated data where the true abundance trend is known. The simulation model developed to fulfill this recommendation used longline CPUE to characterize monthly trends in the spatial distributions of blue and white marlin. The ICCAT Working Group on Assessment Methods compared the simulated monthly distributions to observed monthly distributions for several coastal and recreational fisheries. Some of the predicted and observed distribution patterns were quite similar while others matched poorly. This result is presumably a consequence of the poor representation of longline effort in the near-coastal environment and other areas where recreational fishermen interact with marlin. Seasonal patterns of the 52,275 and 44,351 tag releases of blue and white marlins by recreational fishermen offer independent predictors of the seasonal distributions of blue and white marlin in the near shore environment where recreational fisheries are important. These data are compiled by 1 X 1 degrees, and larger grids selected to represent particular coastal areas. Sample sizes are adequate to predict average seasonal abundances in many coastal areas if it can be reasonably assumed that tagged and released catch is proportional to abundance. Even if this assumption is not entirely valid, the predicted seasonal distributions should be sufficient to initialize simulations to test CPUE standardization methods should the simulator be extended to other than longline fisheries.

Document SCRS/2005/080 provided evaluations of alternative standardization methods using simulated longline CPUE data failed to identify a useful CPUE standardization methodology. This unsatisfactory result could be a consequence of problems with the simulator, the assumptions or data used in the simulations or the standardization methods themselves. Diagnostic evaluations of the simulator and input show that the simulated catch depths and simulated catch by hook position performed as expected. There was a very large change in simulated catchability between 1956-1970 and 1971 and beyond. This change was almost entirely a consequence of the change in assumed fishing depths for the single 5-hpb gear assumed to fish during the early (1954-1970) period as compared to the5-hpb gear and other gear configurations assumed for the later years. GLM methods could not be expected to capture this effect since there was no overlap between simulated gear type catchabilities, even though the 5-hpb gear configuration occurred pre and post 1970. It is unlikely that the simulated data actually reflect the true condition of the fishery during the pre-post 1970 period, and the simulation results provide little guidance for the best standardization approach. A better analysis of the fishing depths of the gears and other factors could substantially improve the utility of the simulation data.

2.2.8 Tagging

Participants in the Southeast Fisheries Science Center's Cooperative Tagging Center (CTC) and the Billfish Foundation Tagging Program (TBF) tagged and released 3,800 billfishes (including swordfish) and 1,796 tunas in 2004. This represents a decrease of about 21% for billfish and an increase of 195% for tunas from 2003 levels. A number of electronic tagging studies involving bluefin tuna and billfish were also carried out in 2004. These are discussed in the bluefin and billfish research sections above.

There were 21 billfish recaptures from the CTC and TBF reported in 2004, representing a decrease of 82% from 2003. Among the 2004 CTC billfish recaptures there were four blue marlin, 12 sailfish, four swordfish, and one spearfish. For the CTC and TBF, a total of 11 tunas were recorded recaptured in 2004; these were seven bluefin, three yellowfin, and one blackfin tuna. These recaptures represent a 52% decrease with respect to year 2003 values. The ICCAT Enhanced Research Program for Billfish (IERPBF) in the western Atlantic Ocean has continued to assistance in reporting tag recaptures to improve the quantity and quality of tag recapture reports, particularly from Venezuela, Barbados, and Grenada.

2.2.9 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 2004 (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 7,624 sets (5,658,827 hooks) were recorded by observer personnel from the SEFSC and NEFSC programs from May of 1992 to December of 2004. Observers recorded over 215,500 fish (primarily swordfish, tunas, and sharks), in addition to marine mammals, turtles, and seabirds during this time period. The percent of fleet coverage through 2004 ranged from 2.5% in 1992 to 9.0% in 2002. Fleet effort for 2004 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/pop.jsp for the years 1992 to 2004.

In 2004, an experimental gear design study was initiated in cooperation with three U.S. pelagic longline vessels that fished in the Gulf of Mexico (GOM) to compare differences in catch rates of tuna target species and sea turtles using the 16/0 size circle hook (no offset), historically used in the GOM by these vessels, and the 18/0 circle hook (no offset) being required by regulations of U.S. vessels fishing outside of the GOM. A total of 60 sets (30,290 hooks fished) were observed aboard these three vessels in the GOM. Results of this gear design experiment were used by managers in instituting U.S. regulatory actions.

Southeast U.S. Shark Drift Gillnet Fishery Observer Coverage. The directed shark gillnet fishery is currently comprised of four to six vessels that operate year round in coastal waters from Georgia to Florida (USA). Sharks are the primary target species. Observations of this fishery have been conducted by on-board observers from 1993-1995 and 1998-present and reports of the catch and bycatch from these observations are available. In 2004, observers monitored 32 drift gillnet sets and 25 strike gillnet sets on 73 trips.

Part II

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

3.1 Catch limits and minimum size

Rebuilding Program for West Atlantic Bluefin Tuna (Rec 98-7; 02-07)
Recommendation 02-07 revised the annual WBFT quota for the United States to 1489.6 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 was applied to the 2004 fishing year of 1 June 2004 through 31 May 2005. The overharvest from 2003 was deducted to result in an adjusted quota of 1294.8 mt for the 2004 fishing year. Measures were applied in the U.S. domestic fisheries to moderate landings due to the reduced amount available for harvest. During the 2004, calendar year, the United States landed an estimated 971 mt of bluefin tuna, which includes an estimated 71.8 mt of dead discards (see Appendix, page 19).

Recommendation to Establish a Plan to Rebuild Blue Marlin and White Marlin Populations (Rec 00-13; 01-10; 02-13; 04-09)
Phase I requires that countries capturing marlins commercially reduce white marlin landings from pelagic longline and purse seine fisheries by 67 percent and blue marlin landings by 50 percent from 1996 or 1999 landings (whichever is greater). 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 monitoring billfish tournaments through scientific observer coverage of at least 5 percent initially, with an objective of 10 percent coverage by 2002. The United States now exceeds these observer requirements. The United States also agreed to limit annual landings by U.S. recreational fishermen to 250 Atlantic blue and white marlin, combined, per year through 2006. Recommendation 04-09 extended Phase I of the blue and white marlin rebuilding plan through 2006, and also specified that stock assessments for these species would be conducted in that year. Recreational catch and release rates for marlin are estimated to be very high (90 – 95%) 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. A proposed rule was published on August 19, 2005, (70 FR 48804) that would codify the 250 fish limit and establish procedures to remain within the limit. In addition, the 19 August, 2005, proposed rule contained measures that would prohibit all landings of white marlin; require the use of circle hooks when using natural baits in billfish tournaments; prohibit the retention of billfish on most commercial vessels; and establish a permit condition requiring that recreational vessels possessing an HMS permit abide by Federal regulations regardless of where fishing, unless a state has more restrictive regulations. These proposed management measures are expected to substantially reduce marlin mortality (landings and dead discards) attributable to the United States.

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 2004 calendar year data from the Recreational Billfish Survey of recreational fishing tournaments recorded landings of 115 blue marlin and 31 white marlin. Preliminary 2004 fishing year data indicate landings of 77 marlin. This survey is not inclusive of fishing activities outside of tournaments. As such, 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. These figures may be significant; however, 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. In an effort to reduce mortality in U.S.

recreational fisheries, steps have been taken to improve data collection in Puerto Rico, and to increase enforcement activities in response to reports of illegal sales, unregistered tournaments and non-permitted anglers. Also, the U.S. Congress appropriated $2.5 million in fiscal year 2004 to enhance research programs on billfish, including means of reducing mortality. As the results of these research projects are obtained, the United States will continue to implement appropriate changes to its management programs.

Recommendation to Establish a Rebuilding Program for North Atlantic Swordfish (Rec 99-7; 02-02; 04-02)
The 1999 recommendation established an annual landings quota of 2951 mt for the United States. Recommendation 02-02 established new quotas for the United States for 2003-2005, a dead discard allowance of 80 mt for 2003, a provision allowing up to 200 mt of North Atlantic swordfish to be caught between 5 degrees North latitude and 5 degrees South latitude, and a provision to transfer 25 mt to Canada. The landings quota and discard allowance are applied to a fishing year of June 1 - May 31. During the 2002 fishing year, there was an underharvest of 3348.9 mt ww. This underharvest was added to the landings quota for the 2003 fishing year. Landings and discard estimates for the 2003 fishing year and 2004 calendar years are provided in the U.S. Compliance Tables (see Appendix). The United States has a minimum size of 33 lb (15 kg) dressed weight, which is designed to correspond to 119 cm, with zero tolerance. Information on compliance with the minimum size is provided in the U.S. compliance tables. The United States codified the provisions from Recommendation 02-02 in November 2004. Recommendation 04-02 amended the Rebuilding Program for North Atlantic Swordfish by extending for one year management measures in place for 2005 as identified in paragraphs 2, 3c, and 7 of ICCAT Recommendation 02-02.

Recommendation on South Atlantic Swordfish (02-03)
This recommendation establishes catch limits for the United States for 2003-2006 at 100 mt for 2003 through 2005 and 120 mt for 2006 and allowed that underharvests in 2000 may be carried over to 2003. The United States is engaged in rulemaking to establish these provisions. The United States landed 20.35 and 15 mt in fishing years 2002 and 2003 and 15 mt in calendar year 2004, respectively. It should be noted that the 15 mt of South Atlantic swordfish reported for fishing year 2003 (1 June, 2003 – 31 May, 2004), are the same fish identified as landed in calendar year 2004. These landings occurred in the latter half of the 2003 fishing year, which overlaps with the first five months of calendar year 2004.

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 2003 and 2004, however, the United States does not have a directed fishery for southern albacore. The United States landed 1.97 mt in fishing year 2002. Estimated landings of southern albacore tuna were 1.97 mt in fishing year 2003 and 0.6 mt in calendar year 2004.

Recommendation on North Atlantic Albacore Catch Limits (02-05, 03-06)
The United States was allocated a landings quota of 607 mt ww for 2004, which is a level consistent with average landings for the United States over the past ten years. The 2002 recommendation applied for one year only, whereas the 2003 recommendation applies to three fishing years (2004-2006). Given the minor share of U.S. mortality in this fishery (< 2%), and given that the ICCAT recommendation provides for the adjustment of next year's catch level in the case of overharvest or underharvest, new domestic regulations have been proposed that would require the United States to work with ICCAT to establish the foundation for developing an international rebuilding program. The recommendation provides that overages/underages of this annual catch limit should be deducted from or added to the catch limit established for the year 2005 and/or 2006. The United States landed 487.8 mt and 446.3 mt during the 2002 and 2003 fishing years, respectively. Calendar year landings for 2004 were 645.9 mt.

In addition, pursuant to ICCAT's recommendation concerning the limitation of fishing capacity on North Atlantic albacore (1998), the United States submits annually the required reports providing a list of U.S. vessels operating in the fishery.

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 2100 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 345.0 mt in fishing year 2003 and 413.7 mt in the calendar year of 2004. Bigeye tuna provisions were carried forward to the fishing year of 2005.

Resolution on Atlantic Sharks (01-11 and 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 to the SCRS bycatch committee with information on shark catches, effort by gear type, and landings and trade of shark products and calls on the full implementation by ICCAT parties and cooperating parties of National Plans of Action (NPOAs) in accordance with the FAO International Plan of Action for the Conservation and Management of Sharks.

The United States submits catch and effort data for sharks and has catch limits in place for Atlantic porbeagle, shortfin mako, and blue sharks. In addition to providing data to the SCRS for the 2004 shark assessment, scientists from the United States 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, 11 February, 2002), which will reduce 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 2002, the United States completed stock assessments for large and small coastal sharks, and then undertook to develop Amendment 1 to the 1999 FMP to reassess shark management. Amendment 1, which was completed at the end of 2003, addressed, among other things, 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 large coastal shark stock assessment will begin during the fall of 2005, with a data workshop currently scheduled for 31 October- 4 November, 2005 in Panama City, Florida, to collect and analyze the necessary data. The LCS stock assessment will follow the Southeast Data Assessment and Review (SEDAR) process and have assessment and review workshops in early 2006. The process should be completed in 2006.

Recommendation for the Conservation of Sharks (04-10)
The 2004 recommendation established, among other things: 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; prohibitions on fishing vessels retaining, transshipping or landing any fins harvested in contravention to the Recommendation; and, a timeline for review of the shortfin mako population assessment and development of management alternatives (2005), as well as reassessment of blue sharks and shortfin mako (2007) by SCRS. The recommendation also encouraged 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. The United States fulfills the requirements of Recommendation 04-10 through existing data collection programs and fishery restrictions.

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; (4) the Northeastern United States: 21,600 nm^2 during the month of June each year; and (5) Northeast Distant Statistical Sampling Area (NED): 2,631,000 nm^2 year-round (per regulations at 50 CFR part 223 and 635). 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.

NMFS has conducted a 3-year experimental fishery in the NED closed area to develop sea turtle bycatch reduction measures with the intention of reopening the NED closed area and exporting the measures to international fishing fleets. Results indicate that various circle hook and bait combinations may reduce sea turtle interactions and post-release mortality, depending upon hook treatment and species. In addition, researchers tested dehookers, line clippers, and other sea turtle release equipment, and as a result of the experiment, revised NMFS' sea turtle careful release and handling protocols and list of release equipment. Vessels that possess and/or use specified hook and bait treatments and that use required, approved sea turtle release gear in accordance with the release and handling protocols, may fish in the NED.

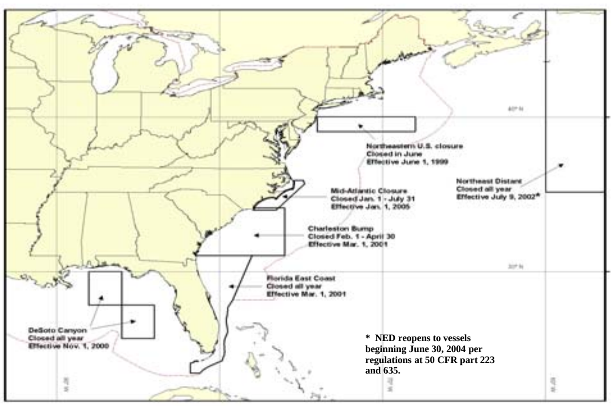


Figure 1: Closures to the Atlantic pelagic longline fishery

3.3 Ban on Imports

Trade Restrictive Recommendations adopted in 2005 (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 6 December 2004, the United States published a final rule (69 FR 70396) that implemented or lifted trade restrictions on several countries in accordance with recommendations 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 17 May 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).

Statistical Documentation Programs

The United States' Bluefin Tuna Statistical Document program has been in place since the 1990s. As required under the program, the United States submits reports to ICCAT twice-yearly providing information on the implementation of the program. In 2005, the United States Implemented ICCAT's recommendation that frozen bigeye tuna and all swordfish be accompanied by an ICCAT Bigeye Tuna or Swordfish Statistical Document, respectively, when those species are imported into the territory of a Contracting Party. Previously, the United States had a domestic documentation program for swordfish called the Certificate of Eligibility (COE). Updated data (2004) from the U.S. Swordfish COE program are currently unavailable due to complications from Hurricane Katrina. The United States will provide updated Swordfish COE data as it becomes available. Either the domestic COE form or the ICCAT Swordfish Statistical Document meets the domestic reporting requirements.

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.gov/st1/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.

3.5 Vessel Monitoring

Recommendation Concerning Minimum Standards for the Establishment of a Vessel Monitoring System in the ICCAT Convention Area (Rec 03-14, 04-11)
The United States implemented the fleet-wide VMS requirement in the Atlantic pelagic longline fishery effective 1 September 2003 (25 June, 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 by these recommendations, in December 2003, the United States issued a rule requiring VMS for bottom longline vessels operating in the vicinity of a time/area closure and for shark gillnet vessels operating during the right whale calving season to improve 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
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. The United States issued permits to 19 tuna longline vessels over 24 meters in overall length. The U.S. submission is provided in the Appendix on page 21.

3.7 Other Recommendations

Resolution on Seabirds (2002)
This resolution encourages ICCAT parties to inform the 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 voluntarily submit all available information on interactions with seabirds, including incidental catches in all fisheries under the purview of ICCAT, to the SCRS. The United States submitted an update on the implementation of its NPOA-Seabirds and observer data on seabird interactions in the Appendix, pg. 48.

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. There are a number of devices available to remove hooks and line from turtles caught on pelagic longlines. 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. Miscellaneous tools have been developed to remove line, hooks, or the barb or eye of hooks on boated turtles. 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. These measures pertain to the entire U.S. 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. As new technological solutions are discovered, the United States will continue to help export these technologies to other fishing nations.

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. NMFS is complying with these recommendations by collecting all relevant information for monitoring before issuing the permits necessary to engage in vessel chartering arrangements.

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 keep either bound or electronic logbooks. For information on the implementation of this recommendation relative to recreational fishing vessels, see the section, *Resolution on Improving Recreational Fishery Statistics,* below.

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), and state landings data. Final regulations adopted in 1999 require selected HMS charter/headboat vessels that do not already do so to complete a logbook; implementation of this requirement is underway. In 1999, NMFS mandated the registration of all recreational tournaments for Atlantic highly migratory species. All tournaments are now required to submit landing reports, if selected. Currently, 100% of billfish tournaments are selected for reporting. The United States finalized regulations effective in March 2003 that implemented a mandatory recreational landings self-reporting system for Atlantic blue and white marlin, west Atlantic sailfish, and North Atlantic swordfish (68 FR 711). The United States is also in rulemaking to make recreational reporting requirements consistent across all tunas, billfish, and swordfish (70 FR 48804); implementation of this requirement is underway.

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)
The United States submitted the list of vessels required, pursuant to this recommendation, to the Secretariat in April 2005. At that time there were 239 U.S. vessels that met the appropriate criteria.

Recommendation by ICCAT on Bluefin Tuna Farming (03-09)
No U.S. action is necessary for this measure. The United States does not engage in bluefin tuna farming in the Atlantic at this time.

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 the elements of this measure. A reporting of the enforcement actions taken on ICCAT species is provided below.

U.S. Swordfish Certificate of Eligibility Program
A summary of data collected through this program in 2003 is provided in the Appendix, page 24.
Updated data (2004) from the U.S. Swordfish COE program are currently unavailable due to complications from Hurricane Katrina. The United States will provide updated Swordfish COE data as it becomes available.

U.S. Enforcement Actions
A summary of actions taken in ICCAT fisheries is provided in the Appendix, page 25.

4. OTHER ACTIVITIES

Recent U.S. management actions for Atlantic highly migratory species 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.access.gpo.gov/su_docs/aces/aces140.html.

REPORTING FORM FOR COMPLIANCE IN 2004

PARTY/ENTITY/FISHING ENTITY: USA

NOTE: ALL 2004 CATCHES ARE ESTIMATES BASED ON CALENDER YEAR DATA, NOT THE U.S. FISHERY MANAGEMENT FISHING YEAR. HIGHLIGHTED BLOCKS IN 2003 INDICATE WHERE UPDATES FOR FISHERY YEAR DATA HAVE OCCURRED.

NORTH ALBACORE	*Initial Catch limits / Quotas*								*Current catches*					*Balance**					*Adjusted quota*				
	2000	*2001*	*2002*	*2003*	*2004*	*2005*			*2000*	*2001*	*2002*	*2003*	*2004*	*2000*	*2001*	*2002*	*2003*	*2004*	*2001*	*2002*	*2003*	*2004*	*2005*
USA		607	607	607	607	607			**415.0**	**453.1**	**487.8**	**446.3**	645.9		**153.9**	**119.2**	**160.7**	121.8				765.20	728.8

SOUTH ALBACORE	*Initial Catch limits / Quotas*						*Reference Years Avg(92-96)*		*Current Catch*					*Informative balance**					*Adjustments not applicable*
	2000	*2001*	*2002*	*2003*	*2004*	*2005*			*2000*	*2001*	*2002*	*2003*	*2004*	*2000*	*2001*	*2002*	*2003*	*2004*	
USA	**5,8**	100.0	100.0	100.0	100.0	100.0			**0.9**	**2.0**	**2.0**	**2.0**	0.6		**98.0**	**98.0**	**98.0**	99.4	

NORTH SWORDFISH	*Initial Catch limits / Quotas*						*Reference Years*		*Current catches*					*Balance**					*Adjusted quota / catch limit*				
	2000	*2001*	*2002*	*2003*	*2004*	*2005*	*1996 (SCRS-97)*		*2000*	*2001*	*2002*	*2003*	*2004*	*2000*	*2001*	*2002*	*2003*	*2004*	*2001*	*2002*	*2003*	*2004*	2005
USA	2951.0	2951.0	2951.0	3877.0	3907.0	3907.0	4148		**2683.8**	**2318.7**	**2323.8**	**2423.9**	2596.6#	**158.9**	**1195.3**	**1682.9**	**3025.9**	4250.8	**3682.0**	**4473.2**	**5670.6**	**6855.8**	8730.6

275.6 in dead discards for 2003

SOUTH SWORDFISH	*Initial Catch limits / Quotas*						*Reference Years*		*Current Catch*					*Balance**					*Adjusted Quota / Catch limit*				
	2000	*2001*	*2002*	*2003*	*2004*	*2005*	*1995*	*1996*	*2000*	*2001*	*2002*	*2003*	*2004*	*2000*	*2001*	*2002*	*2003*	*2004*	*2001*	*2002*	*2003*	*2004*	*2005*
USA	384	384	384	100	100	100		**384.0**	**124.7**	**92.8**	**20.5**	**15.0**	15	**259.3**	**291.2**	**363.5**	**85.0**	85			**359.6**	**444.6**	529.6

EAST BLUEFIN	*Initial Catch limits / Quotas*						*Reference Years*		*Current Catch*					*Balance**					*Adjusted Quota / catch limit*				
	2000	*2001*	*2002*	*2003*	*2004*	*2005*	*max(93-94) (SCRS 97)*		*2000*	*2001*	*2002*	*2003*	*2004*	*2000*	*2001*	*2002*	*2003*	*2004*	*2001*	*2002*	*2003*	*2004*	*2005*
USA	0	0	0	0	0	0																	

WEST BLUEFIN	*Initial Catch Limits*								*Current Catch*					*Balance**					*Adjusted Quota/Catch limit*				
	2000	*2001*	*2002*	*2003*	*2004*	*2005*			*2000*	*2001*	*2002*	*2003*	*2004*	*2000*	*2001*	*2002*	*2003*	*2004*	*2001*	*2002*	*2003*	*2004*	*2005*
USA	1387.0	1387.0	1387.0	1489.6	1489.6	1489.6			**1185.0**	**1589.0**	**1846.8**	**1472.9**	899.25	438	248.3	-211.5	-194.8	395.5	1825	1635.3	1283.74	1294.8	1881.4*

WEST BFT DISCARDS	*Initial Catch Limits*								*Current Catch*					*Balance**					*Adjustments to be made to total quota, not discard allowance*
	2000	*2001*	*2002*	*2003*	*2004*	*2005*			*2000*	*2001*	*2002*	*2003*	*2004*	*2000*	*2001*	*2002*	*2003*	*2004*	
USA	67.7	67.7	67.7	67.7	67.7	67.7			30.0	41.4	56.4	57.6	71.8	37.7	26.3	11.3	10.1	-4.1	

BIGEYE	*Initial Catch limits / Quotas*						*Reference years*		*Current catches*					*Balance**					*Adjusted Catch limit*				
	2000	*2001*	*2002*	*2003*	*2004*	*2005*	Average (91-92)	*1999 (SCRS/00)*	*2000*	*2001*	*2002*	*2003*	*2004*	*2000*	*2001*	*2002*	*2003*	*2004*	*2001*	*2002*	*2003*	*2004*	*2005*
USA							893.5	1261.0	**589.2**	**1363.0**	**595.6**	**345.0**	413.7										

WHITE MARLIN	*Initial Catch (landings) Limits*						*Reference years (landings)*		*Current Landings*								*Balance**				*Adjusted landings limit*		
	2000	*2001*	*2002*	*2003*	*2004*	*2005*	*1996*	*1999*	*2001*		*2002*		*2003*		*2004*		*2001*	*2002*	*2003*	*2004*	*2003*	*2004*	*2005*
							(PS+LL)	*(PS+LL)*	*total*	*LL+PS*	*total*	*LL+PS*	*total*	*LL+PS*	*total*	*LL+PS*							
USA																							
Total nº WHM+BUM	250	250	250	250	250	250			193		279		136		149		57	-29	114	101			

BLUE MARLIN	*Initial Catch (landings) Limits*						*Reference years (landings)*		*Current Landings*								*Balance**				*Adjusted landings limit*		
	2000	*2001*	*2002*	*2003*	*2004*	*2005*	*1996*	*1999*	*2001*		*2002*		*2003*		*2004*		*2001*	*2002*	*2003*	*2004*	*2003*	*2004*	*2005*
							(PS+LL)	*(PS+LL)*	*total*	*LL+PS*	*total*	*LL+PS*	*total*	*LL+PS*	*total*	*LL+PS*	*LL+PS*	*LL+PS*	*LL+PS*				
USA																							

*In case of over-harvest of any species, explain how the over-harvest occurred and the actions taken, or to be taken, to prevent further over-harvest

*This quota includes the predicted overage in bluefin tuna dead discards for 2004

#This catch includes dead discards as required by the 2002 recommendation

REPORTING FORM FOR COMPLIANCE IN 2004 - SIZE LIMITS
PARTY/ENTITY/FISHING ENTITY: UNITED STATES OF AMERICA

SIZE

		2004 catches						*Tolerance limits & reported estimates over tolerance limits*						
	Species	*BET*	*YFT*	*SWO*		*BFT*		*BET*	*YFT*	*SWO*		*BFT*		
	Area	*ATL*	*ATL*	*AT.N*	*AT.S*	*AT.E+MED*	*AT.W*	*ATL*	*ATL*	*AT.N*	*AT.S*	*AT.E*	*Medi*	*AT.W*
Recommendations / Size limits	Number							79-1	72-1	90-2 (95-10)		02-08	02-08	91-1
	Min Weight (kg)	3.2					30	3.2	3.2	25 kg or		6.4	4.8	30
	Min Size (cm)			119	119		115	--	--	125 cm OR (119 cm)		--	--	115
	Tolerance (% of total)	15%		0%	0%		8%	15%	15%	15% (0%)		10%	0%	8%
	Tolerance Type							number	number	number		number	weight	weight
	(weight/number)						191.9							
USA		0	0	3.4(%)**	2.1(%)**		12.8(%)							

In the event that harvest of any ICCAT stock exceeds specified minimum size tolerance adopted by the Commission, explain to the Compliance Committee:
a) The magnitude of the over-harvest
b) Domestic measures implemented to avoid further over-harvest
c) Monitoring of compliance with domestic measures and;
d) Any other actions to be taken to prevent further over-harvest

** These percentages are for swordfish less than 119 cm

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

a. Management in the fishing grounds

	Scientific Observer boarding	Satellite-based vessel monitoring system	Daily or required periodic catch report	Entry/Exit report
	Yes	Yes	Yes	Yes
Note	See section 2.2.9	Required on all vessels with pelagic longline gear on board and permitted to fish for swordfish/tuna using longline gear (effective 9/1/2003)	Vessel logbook program[1]	Vessel logbook program[1]

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

	Transshipment report	Port inspection	Statistical document program
	No		
Note	Transshipment prohibited per 50 CFR 635.29	See below	See below

c. Management at landing ports

	Landing inspection	Landing reporting	Cooperation with other Parties
	Yes	Yes	Yes
Note	Port sampling program[2]	Vessel logbook program, Dealer reporting program[3], Bluefin Statistical Document, Swordfish Statistical Document, Bigeye Tuna Statistical Document	

[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 are selected to submit 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. In some cases, social and economic data such as volume and cost of fishing inputs are provided. 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]Port sampling program. Port sampling agents are stationed at major ports along the Atlantic and Gulf of Mexico coasts to collect biological samples and size frequency, age-at-length, catch per unit effort, and catch composition data. Port samplers routinely visit major fish dealers and randomly sample catches.

[3]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.

Swordfish Certificate of Eligibility Program 2003*

Imports of Swordfish into the United States (in metric tons, dressed weight).

Country	Atlantic Ocean	Pacific Ocean	Indian Ocean	Not Provided	Total
Not Provided	0.3	0.7	16.5	0.0	**17.5**
Australia	0.0	2.4	0.0	0.0	**2.4**
Barbados	2.4	0.0	0.0	0.0	**2.4**
Brazil	698.6	0.0	0.0	0.0	**698.6**
Canada	62.2	0.0	0.0	0.0	**62.2**
Chile	0.0	664.6	0.0	0.0	**664.6**
Costa Rica	1.7	161.4	0.0	0.6	**163.7**
Ecuador	0.0	233.8	0.0	0.0	**233.8**
El Salvador	0.0	10.1	0.0	0.0	**10.1**
Fiji Island	0.0	53.6	0.0	0.0	**53.6**
Grenada	17.0	0.0	0.0	0.0	**17.0**
Indonesia	0.0	0.0	12.7	0.0	**12.7**
Malaysia	0.0	44.7	13.3	36.0	**93.9**
Mexico	0.0	249.4	0.0	0.0	**249.4**
Namibia	23.0	0.0	0.0	1.7	**24.7**
New Zealand	0.0	143.5	0.0	0.0	**143.5**
Nicaragua	0.0	0.3	0.0	0.0	**0.3**
Panama	0.0	1,065.9	0.0	0.0	**1,065.9**
Philippines	0.0	13.4	0.0	0.0	**13.4**
R.S.A.	0.0	0.0	79.3	0.0	**79.3**
Seychelles	0.0	0.0	0.1	1.1	**1.2**
Singapore	0.0	72.6	64.2	0.0	**136.7**
South Africa	94.1	0.0	251.3	0.0	**345.4**
Sri Lanka	0.0	0.0	0.0	8.8	**8.8**
Taiwan	0.9	407.6	1,198.8	0.0	**1,607.3**
Tonga	0.0	3.1	0.0	0.1	**3.3**
Trinidad & Tobago	31.1	0.0	0.0	0.0	**31.1**
Uruguay	170.0	0.0	0.0	0.0	**170.0**
Venezuela	20.5	0.0	0.0	0.0	**20.5**
Vietnam	0.0	23.4	0.0	0.0	**23.4**
Total Reported by COEs	1,121.7	3,150.7	1,636.1	48.3	5,956.8
Total Imports Reported to U.S. Customs					13,855.0

Total Not Reported by COEs	7,898.2

* COE Data as of 7/11/04

NOAA ENFORCEMENT ACTIONS TAKEN ON ICCAT SPECIES TO BE PROVIDED LATER

Appendix Table 2.1-YFT. Annual Landings (MT) of Yellowfin Tuna from calendar years 2000 to 2004.						
Area	Gear	2000	2001	2002	2003	2004
NW Atlantic	Longline	734	632	400	272	654
	Rod and reel*	3,809	3,691	2,624	4,672	3,434
	Gillnet	0	8	5	1	3
	Trawl	2	3	0	2	1
	Handline	236	243	137	148	208
	Trap	1	0	0	0	0
	Uncl	1	7	**	0	13
Gulf of Mexico	Longline	2,133	1,506	2,109	1,828	1,813
	Rod and reel*	52	494	200	640	247
	Handline	29	43	100	59	19
Caribbean	Longline	12	23	12	7	5
	Handline	19	14	7	9	7
	Gillnet	0	0	0	**	0
NC Area 94a	Longline	2	4	0	5	0
SW Atlantic	Longline	20	36	52	42	17
	Total	7,050	6,703	5,646	7,685	6,421

Note: not all gears are represented in this Table.

* 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 2.1-SKJ. Landings (MT) of Skipjack Tuna from calendar year 2000 to 2004						
Area	Gear	2000	2001	2002	2003	2004
NW Atlantic	Longline	0.0	0.1	**	0.9	0.1
	Rod and reel*	13.1	32.9	23.3	34.0	27.3
	Gillnet	1.9	3.6	**	0.9	15.8
	Trawl	0.0	0.2	**	0.5	0.2
	Handline	0.2	0.2	0.2	0.2	0.6
	Trap	0.0	0.0	**	1.5	**
Gulf of Mexico	Longline	0.2	0.2	**	**	0.3
	Rod and reel*	16.7	16.1	13.2	11.0	6.3
	Handline	0.7	0.0	0.0	**	0.2
Caribbean	Longline	1.6	4.0	2.5	3.3	0.3
	Gillnet	0.6	1.6	0.6	0.4	0.3
	Rod and reel*	NA	NA	NA	15.7	40.4
	Handline	8.8	10.3	12.5	9.2	9.6
	Trap	0.3	0.4	0.7	0.2	**
SW Atlantic	Longline	0.0	0.0	0.0	0.0	0.0
	Total	44.1	69.6	53.0	77.8	101.4

Note: not all gears are represented in this Table.
* 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 2.1-BET. Landings (MT) of Bigeye tuna by year for calendar year 2000-2004.

Area	Gear	2000	2001	2002	2003	2004
NW Atlantic	Longline	333.2	506.1	328.6	168.7	264.9
	Rod and reel*	34.4	366.2	49.6	188.5	94.6
	Gillnet	0.0	0.2	0.0	0.0	0.0
	Handline	4.1	33.2	13.8	6.0	3.0
	Trawl	1.7	0.4	0.5	**	0.3
	Pound	0.0	0.0	0.0	0.1	0.0
	Uncl	0.0	1.8	0.0	0.0	1.4
Gulf of Mexico	Longline	44.5	15.3	41.0	27.5	20.2
	Rod and reel*	0.0	0.0	0.0	0.0	6.0
	Handline	0.1	0.5	0.6	0.3	0.1
Caribbean	Longline	13.7	31.9	29.7	7.2	3.5
	Handline	1.5	0.0	0.0	0.0	0.0
NC Area 94a	Longline	63.1	61.0	45.2	36.9	5.0
SW Atlantic	Longline	77.4	68.2	91.3	44.6	14.4
	Total	573.6	1084.7	600.3	479.8	413.3

Note: not all gears are represented in this Table.
* 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 calendar year 2000 to 2004.						
Area	Gear	2000	2001	2002	2003	2004
NW Atlantic	Longline	22.8	17.7	7.8	16.3	28.8
	Handline	3.2	9.0	4.5	2.5	1.5
	Purse Seine	275.2	195.9	207.7	265.4	31.8
	Harp	184.2	101.9	55.5	87.9	41.2
	* Rod and reel (>145 cm LJFL)	632.8	993.4	1008.4	684.8	329.0
	* Rod and reel (<145 cm LJFL)	49.5	249.3	519.3	314.6	387.8
	Uncl	0.2	0.5	0.0	0.0	0.2
Gulf of Mexico	Longline	43.3	19.8	32.8	53.8	67.3
	* Rod and reel	0.9	1.7	1.5	0.0	0.0
	Total	1,212.1	1,213.7	1,837.5	1,416.9	887.6

Note: not all gears are represented in these Tables.
** <= 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 2.2-ALB. Landings (MT) of Albacore tuna for calendar year 2000 to 2004.						
Area	Gear	2000	2001	2002	2003	2004
NW Atlantic	Longline	130.5	171.7	124.0	95.6	106.9
	Gillnet	0.8	3.3	2.6	0.1	4.7
	Handline	2.9	1.7	3.9	1.4	5.4
	Trawl	0.0	0.0	0.3	**	2.6
	Rod and reel*	250.8	122.3	323.0	333.8	500.5
	Uncl	0.1	0.1	0.0	0.0	0.0
Gulf of Mexico	Longline	4.1	4.9	9.5	7.7	9.8
	Handline	0.0	0.0	0.0	**	0.0
Caribbean	Longline	9.2	8.7	8.4	4.0	3.2
	Gillnet	0.1	0.5	**	**	**
	Trap	0.2	0.3	0.6	0.2	0.0
	Handline	5.0	2.2	2.7	2.0	2.1
NC Area 94a	Longline	2.6	6.1	4.8	1.6	0.2
SW Atlantic	Longline	0.9	2.4	8.3	2.0	0.5
	Total	407.35	324.2	488.1	448.4	635.9

Note: not all gears are represented in these Tables.
** $\leq$= 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 calendar year 2000 to 2004.						
Area	Gear	2000	2001	2002	2003	2004
NW Atlantic	* Longline	1,547.6	1,220.8	1,132.8	1,341.3	1,157.8
	Gillnet	0.0	0.0	0.1	0.0	**
	Handline	7.7	8.6	8.8	10.8	18.4
	Trawl	10.9	2.5	3.9	6.0	7.6
	* Unclassified	1.4	1.8	0.1	1.6	9.8
	Harpoon	0.6	7.4	2.8	0.0	0.5
	Rod and Reel***	15.6	1.5	21.5	5.9	24.3
	Trap	0.0	0.0	**	0.1	0.0
Gulf of Mexico	* Longline	631.7	494.6	549.1	507.6	500.0
	Handline	1.2	0.3	2.9	9.8	1.6
Caribbean	* Longline	331.9	347.0	329.0	274.5	295.8
	Trap	0.3	0.0	0.1	**	**
NC Atlantic	* Longline	804.6	420.6	587.9	632.8	597.4
S Atlantic	* Longline	143.8	43.2	199.9	20.9	15.7
	TOTAL	3,497.3	2,548.3	2,838.9	2,811.3	2,628.9

Note: not all gears are represented in this Table.
* 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)**
1981						12,603	50.035	630,591				12,603	630,591
1982	45.41	23.17	51,077		1,354	20,015	50.996	1,020,685				21,369	1,071,762
1983	51.89	26.47	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	66.850	2,385	42,572	65.631	2,794,043				44,957	2,871,091
1987	87.46	44.62	98,375	69.171	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	68.958	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	57.574	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	67.221	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	76.681	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	73.737	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	81.631	5,278	29,861	50.988	1,522,553	30,545	1,191.52	1,340,217	65,684	3,298,407
1994	513.46	261.97	577,535	82.713	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	75.676	9,517	32,673	47.629	1,556,182	10,864	710.27	798,909	53,054	3,075,310
1996	402.03	205.12	760,364	81.934	9,280	18,534	33.697	624,540	22,153	949.22	1,067,682	49,967	2,452,586
1997	381.08	194.43	739,486	85.937	8,614	8,743	54.834	479,414	7,754	250.42	281,671	25,111	1,500,571
1998	267.07	136.26	624,483	83.184	7,509	11,762	35.977	423,161	6,002	280.09	315,044	25,273	1,362,689
1999	113.10	57.70	376,471	88.388	5,424	11,122	48.304	537,237	3,464	117.63	132,310	20,010	1,046,018
2000	191.15	97.53	407,637	69.280	5,884	13,351	16.749	223,616	7,495	216.13	243,102	26,730	874,355
2001	193.58	98.77	411,564	62.978	6,524	3,821	83.938	320,727	6,158	155.75	175,187	16,503	907,478
2002	174.06	88.81	533,239	60.717	8,791	4,673	87.152	407,261	5,335	92.73	104,302	18,799	1,044,803
2003	158.08	80.65	625,364	60.268	10,660	4,333	87.152	377,630	4,341	71.93	80,907	19,334	1,083,900

[1] From weighout data sheets; [2] Wet weight to dry weight conversion ratio is 1.96; [3] 1982-1994 data are from weighout data sheets, 1995-2003 data are the sum of the southeast quota monitoring/southeast general canvass programs and the dealer weighout (northeast general canvass) program; [4] In pounds dressed weight from weighout data sheets; [5] 1982-1994 data are from weighout data sheets,1995-2003 data obtained as the sum of dividing the southeast quota monitoring/southeast general canvass data by average weights from the dealer weighout (column 5) and the numbers reported directly in the dealer weighout data sheets; [6] Almost all recreational landings are from the MRFSS survey; [7] In pounds dressed weight, value for 2003 assumed equal to that in 2002

because of small sample size; [8] Wet weight to dry weight conversion ratio is 1.96.						

Appendix Table 2.6b-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)
1981						4,925	46.653	229,766				4,925	229,766
1982	0	0	0		0	0	46.653	-				0	0
1983	0	0	0		0	14,593	46.653	680,807				14,593	680,807
1984	0	0	0		0	2,579	46.653	120,318				2,579	120,318
1985	0	0	0		0	11,621	33.003	383,528				11,621	383,528
1986	0.40	0.20	450	148.500	6	18,898	66.182	1,250,707				18,904	1,251,157
1987	0	0	0	56.412	0	20,683	47.545	983,373	12,506	526.20	591,868	33,189	1,575,241
1988	0.10	0.05	112	56.412	4	12,235	32.620	399,106	12,934	421.16	473,719	25,173	872,937
1989	0	0	0	56.412	0	7,419	41.011	304,261	12,525	480.00	539,902	19,944	844,163
1990	0.25	0.13	286	56.412	6	1,745	56.134	97,954	13,141	741.33	833,845	14,892	932,084
1991	0	0	0	56.412	0	6,643	52.120	346,233	16,562	772.32	868,702	23,205	1,214,936
1992	0.47	0.24	529	67.769	14	5,853	41.191	241,091	7,043	184.39	207,401	12,910	449,021
1993	7.88	4.02	8,860	75.188	85	14,114	53.567	756,045	29,329	1,136.33	1,278,139	43,528	2,043,044
1994	7.82	3.99	8,796	79.960	105	507	46.653	23,653	11,986	572.24	643,653	12,598	676,103
1995	3.61	1.84	7,165	66.557	108	464	46.653	21,647	9,725	618.15	695,293	10,297	724,104
1996	5.40	2.76	23,994	70.819	338	9,150	34.070	311,741	18,996	710.69	799,381	28,484	1,135,115
1997	1.42	0.72	2,502	52.933	48	4,236	55.740	236,115	6,614	184.61	207,643	10,898	446,260
1998	2.87	1.46	3,934	40.873	96	6,085	46.653	283,884	5,295	195.25	219,616	11,476	507,434
1999	0.16	0.08	1,047	6.725	181	5,218	46.653	243,435	2,772	98.96	111,310	8,171	355,792
2000	0.61	0.31	4,130	62.634	66	7,010	46.653	327,038	6,298	137.19	154,311	13,374	485,478
2001	3.09	1.58	3,541	40.579	88	950	46.653	44,320	5,219	105.87	119,082	6,257	166,944
2002	0.20	0.10	233	56.500	4	0	46.653	0	4,335	67.87	76,340	4,339	76,573
2003	1.43	0.73	7,932	67.083	118	376	46.653	17,542	3,362	54.79	61,628	3,856	87,102

[1] From weighout data sheets; [2] Wet weight to dry weight conversion ratio is 1.96; [3] 1982-1994 data are from weighout data sheets, 1995-2003 data are the sum of the southeast quota monitoring/southeast general canvass programs and the dealer weighout (northeast general canvass) program; [4] In pounds dressed weight from weighout data sheets, values for 1987-1991 are taken as the mean of 1992-2002 values; [5] 1982-1994 data are from weighout data sheets, 1995-2003 data obtained as the sum of dividing the southeast quota monitoring/southeast general canvass data by average weights from the dealer weighout (column 5) and the numbers reported directly in the dealer weighout data sheets; [6] Almost all recreational landings are from the MRFSS survey;

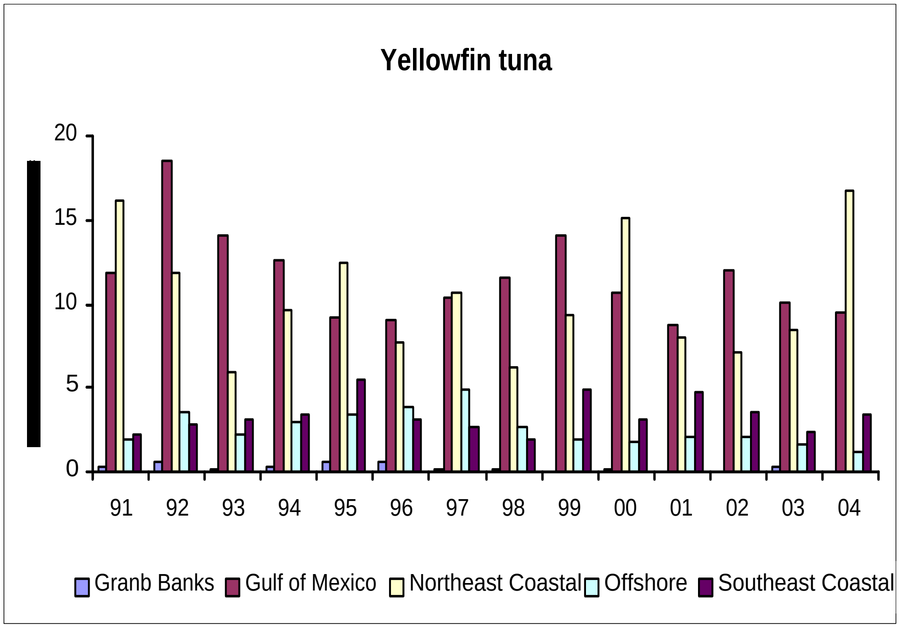
[7] In pounds dressed weight, values for 1981-84, 1994-95, and 1998-2003 are taken as the mean of 1985-93 and 1996-97 values for which n>=5;									
[8] Wet weight to dry weight conversion ratio is 1.96.									

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

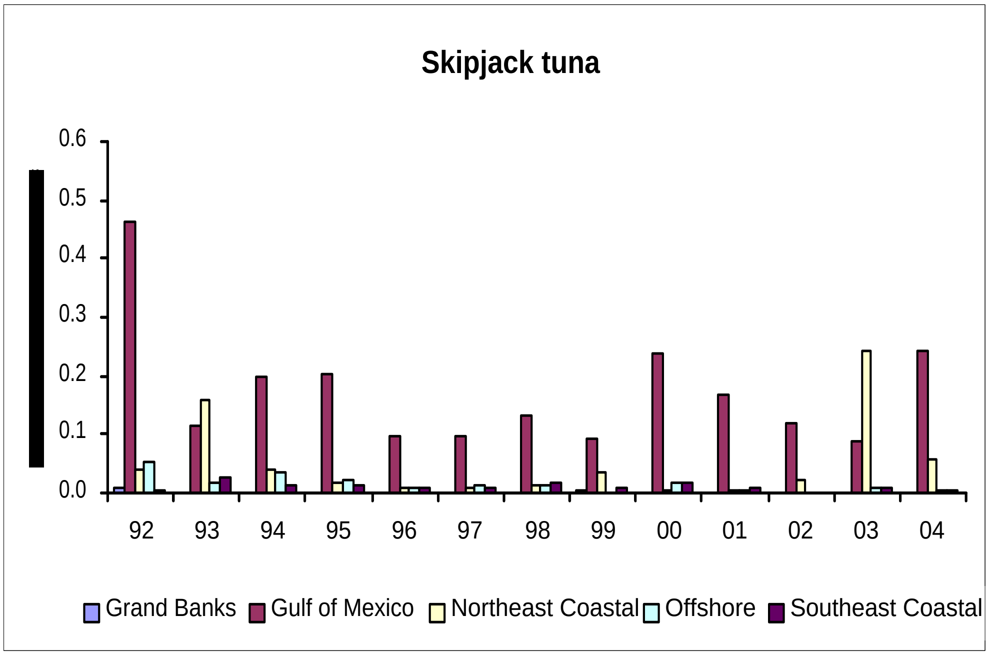
	Commercial					Recreational			Discards			Total	
Year	mt (ww) [1]	mt (dw) [2]	lb (dw) [3]	av. weight[4]	number [5]	number [6]	av. weight[7]	lb (dw)	number	mt (ww)	lb (dw) [8]	number	lb (dw)
1981						7,678	56.395	433,001				7,678	433,001
1982	42.12	21.49	47,376		1298	13,522	50.996	689,568				14,820	736,944
1983	6.78	3.46	7,626		225	7,375	56.141	414,039				7,600	421,665
1984	42.46	21.66	47,759		1436	15,474	67.531	1,044,975				16,910	1,092,734
1985	53.24	27.16	59,884		1877	79,912	41.487	3,315,309				81,789	3,375,193
1986	64.76	33.04	72,842	64.936	2,318	20,792	70.107	1,457,665				23,110	1,530,507
1987	77.84	39.71	87,554	65.771	2,592	14,809	35.069	519,337	217	8.72	9,808	17,618	616,699
1988	101.37	51.72	114,021	63.095	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	55.771	4,608	8,367	90.117	754,009	249	9.01	10,134	13,224	904,248
1990	91.77	46.82	103,223	63.843	3,081	8,509	35.483	301,925	259	10.31	11,593	11,849	416,741
1991	104.87	53.51	117,957	75.502	3,085	3,422	69.020	236,186	245	11.16	12,553	6,752	366,697
1992	125.97	64.27	141,691	71.833	3,782	8,382	33.589	281,543	771	38.41	43,203	12,935	466,437
1993	281.09	143.41	316,164	77.355	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	76.717	4,623	4,496	79.296	356,515	558	21.45	24,127	9,677	745,818
1995	288.83	147.36	460,767	71.209	6,307	31,212	51.227	1,598,897	446	28.44	31,989	37,965	2,091,653
1996	238.05	121.46	427,011	83.239	5,077	8,618	30.265	260,824	0	0	0	13,695	687,835
1997	245.46	125.23	446,312	84.574	5,277	3,025	60.839	184,038	0	0	0	8,302	630,350
1998	199.76	101.92	401,487	82.327	3,695	5,633	29.590	166,680	0	0	0	9,328	568,168
1999	90.05	45.94	217,873	87.763	3,590	1,383	56.141	77,643	0	0	0	4,973	295,516
2000	166.74	85.07	286,765	66.185	4,335	5,813	56.141	326,347	0	0	0	10,148	613,112
2001	182.02	92.87	347,838	63.154	5,505	2,871	83.938	240,986	0	0	0	8,376	588,824
2002	165.59	84.48	314,746	61.024	5,166	3,206	87.152	279,409	0	0	0	8,372	594,155
2003	140.80	71.84	283,863	58.431	4,889	3,957	87.152	344,860	0	0	0	8,846	628,724

[1] From weighout data sheets; [2] Wet weight to dry weight conversion ratio is 1.96; [3] 1982-1994 data are from weighout data sheets, 1995-2003 data are the sum of the southeast quota monitoring/southeast general canvass programs and the dealer weighout (northeast general canvass) program; [4] In pounds dressed weight from weighout data sheets; [5] 1982-1994 data are from weighout data sheets, 1995-2003 data obtained as the sum of dividing the southeast quota monitoring/southeast general canvass data by average weights from the dealer weighout (column 5) and the numbers reported directly in the dealer weighout data sheets; [6] Almost all recreational landings are from the MRFSS survey; [7] In pounds dressed weight, values for 1983 and 1999-2000 are taken

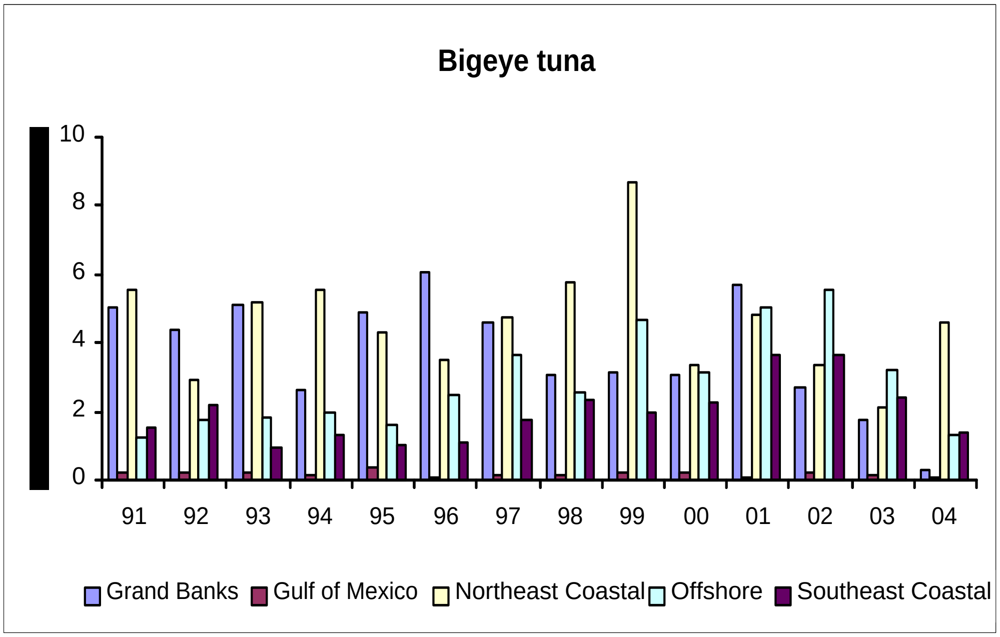
as the mean of 1981-82, 1984-98, and 2001-02 values for which n>=5, value for 2003 assumed equal to that in 2002 because of small sample size too;									
[8] Wet weight to dry weight conversion ratio is 1.96.									



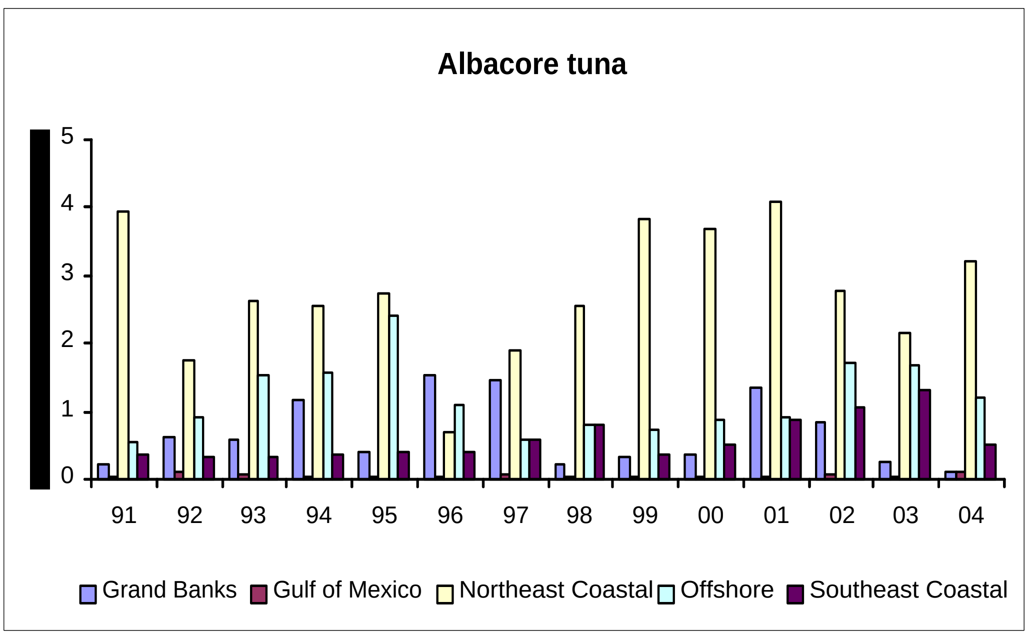
Appendix Figure 2.1-YFT. *Nominal catch rates for YFT in US Longline logbook reports.*



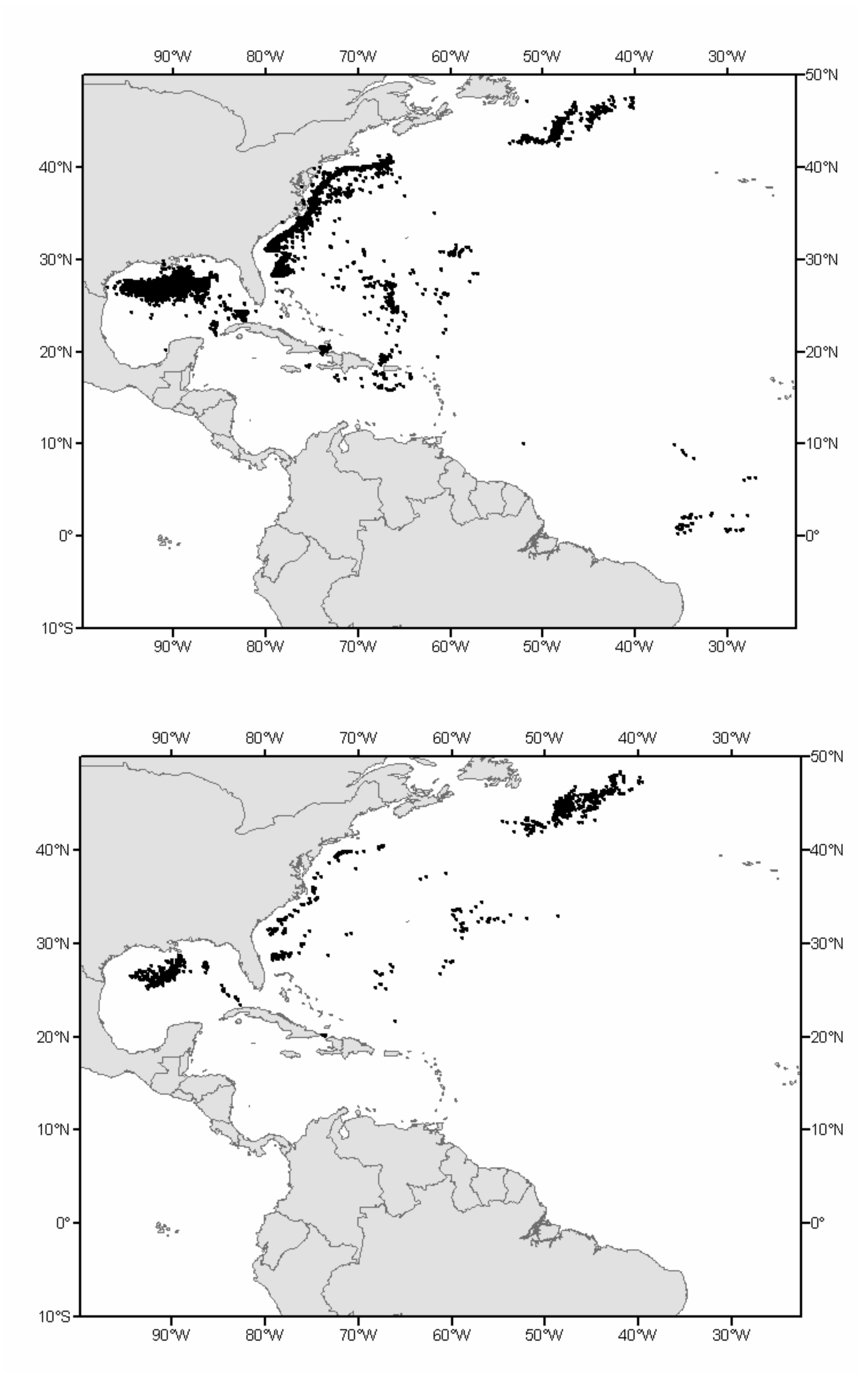
Appendix Figure 2.1-SKJ. *Nominal catch rates for SKJ in US Longline logbook reports.*



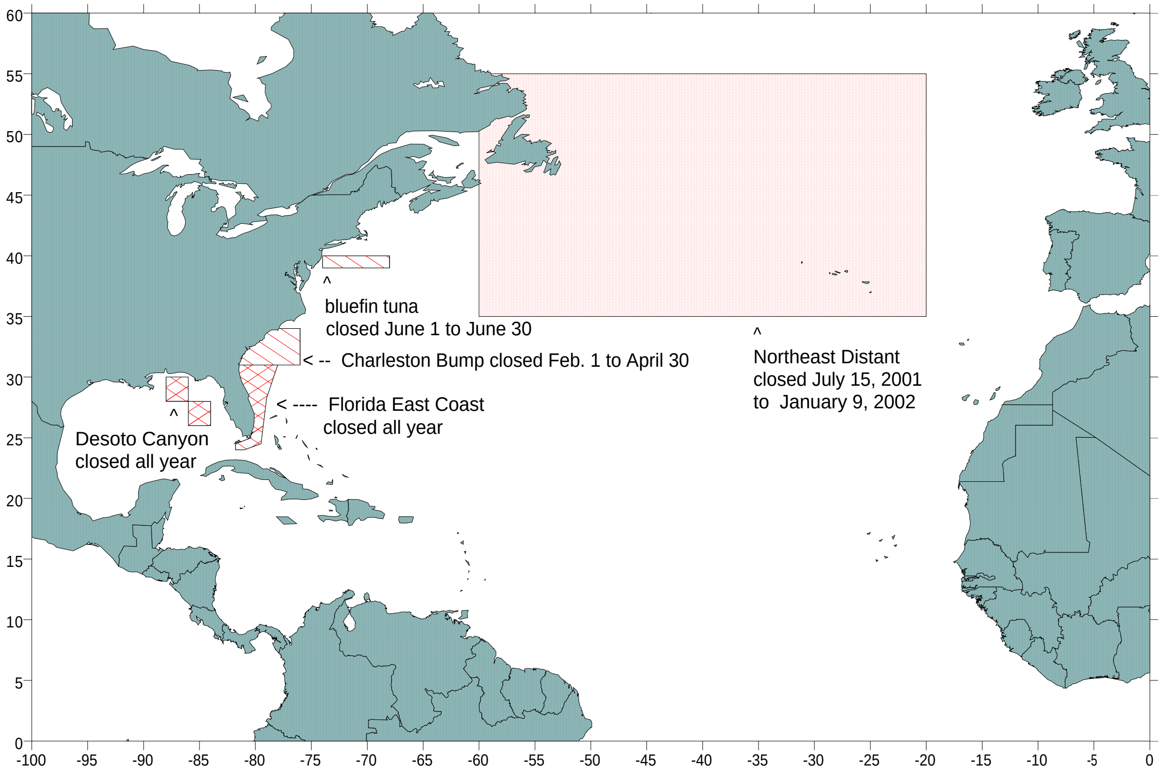
Appendix Figure 2.1-BET. *Nominal catch rates for BET in US Longline logbook reports.*



Appendix Figure 2.1 - ALB. *Nominal catch rates for ALB in US Longline logbook reports.*



Appendix Figure 2.2 -Observers*. Reported (upper) and observed (lower) longline positions in 2004.*



Appendix Figure 2.3- Time/area closures for the U.S. longline fishery in 2004

***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.* "Fished" implies a vessel submitted at least one positive fishing report during that year, "Caught Swordfish" means the vessel reported catching at least one swordfish during that year and "Caught Swordfish in 5 months" means the vessel 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.

.

NUMBERS OF ACTIVE VESSELS

YEAR	FISHED	CAUGHT SWORDFISH	CAUGHT SWORDFISH IN 5 MONTHS	HOOKS REPORTED
1987	297	273	180	6,558,426
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	191	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

Table 2. Catch in numbers (reported) and in metric tons (estimated) of swordfish < 125 cm and reported number of hooks in years 2001-2003 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 swordfish				Number of hooks				Metric tons.			
	Mean	2002	2003	2004	Mean	2002	2003	2004	Mean	2002	2003	2004
CAR	434	74 %	36 %	104%	237,280	53 %	48 %	122%	6	80%	33%	100%
FEC	2,500	11 %	17 %	6%	619,099	73 %	73 %	36%	37	11%	17%	5%
GOM	1,820	130 %	113 %	117%	2,858,863	102 %	109 %	123%	17	113%	117%	120%
MAB	1,213	137 %	94 %	87%	1,008,860	86 %	53 %	75%	18	111%	83%	84%
NEC	769	68 %	62 %	26%	734,782	72 %	53 %	53%	11	53%	56%	24%
NED	983	38 %	53 %	27%	497,606	87 %	116 %	90%	13	38%	57%	28%
SAB	2,412	37 %	60 %	42%	601,499	58 %	77 %	95%	39	31%	57%	37%
ALL	2,412	37 %	60 %	42%	601,499	58 %	77 %	95%	39	31%	57%	37%

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 swordfish (reported)				Number of Hooks (reported)				Mt (estimated)				change in mt		
		Mean (97-99)	2002	2003	2004	Mean (97-99)	2002	2003	2004	Mean (97-99)	2002	2003	2004	2002	2003	2004
CAR	open	434	323	155	449	237280	125812	113176	289726	6	5	2	6	-1	-4	0
FEC	closed	2364	93	252	98	475733	151235	282842	171494	35	1	3	1	-34	-31	-34
FEC	open	136	191	204	43	143366	302461	172071	54095	2	3	3	1	1	1	-1
GOM	closed	426	5	0	3	237572	13635	8750	4900	4	0	0	0	-4	-4	-4
GOM	open	1394	2370	2083	2127	2621292	2902425	3102043	3504505	13	20	20	21	6	7	7
MAB	closed	2	0	0	0	6250	0	0	0	0	0	0	0	0	0	0
MAB	open	1211	1662	1181	1053	1002610	861128	530713	747390	18	20	15	15	2	-3	-3
NEC	closed	11	0	0	0	41150	0	0	954	0	0	0	0	0	0	0
NEC	open	769	519	477	202	734782	530595	388706	412808	11	6	6	3	-5	-5	-8
NED	closed	983	370	516	262	496806	431691	576727	446477	13	5	7	4	-8	-6	-9
NED	open	0	0	8	0	800	0	2858	0	0	0	0	0	0	0	0
SAB	closed	939	23	10	0	216264	5176	5660	3360	15	0	0	0	-15	-15	-15
SAB	open	1474	870	1453	1018	385236	343710	458775	569134	24	12	22	15	-12	-2	-9
Total	closed	4719	491	778	363	1473775	601737	873979	627185	65	6	10	5	-59	-55	-60
Total	open	5933	5935	5561	4892	5125366	5066131	4768342	5577658	82	74	76	64	-8	-5	-18

Appendix Table BYP Samples 1. Genetic samples from the Mediterranean Sea, the east Atlantic and the west Atlantic which were deposited in the sample archive in Charleston, SC, held at U. South Carolina (pers. comm. Bert Ely) or U. Maryland / Virginia Institute of Marine Science (David Secor pers. comm.). The Icelandic Marine Research Institute collected the samples from the east Atlantic in 2000-2002.

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Total
med												
< 39 cm	12	22				85	91					210
39-64 cm		33				16	14					63
65-88 cm		9					7					16
88-111 cm		2				1						3
> 111 cm						24						24
unknown						1						1
Total-Med	12	66				127	112					317
east												
< 39 cm							1					1
39-64 cm							9					9
65-88 cm							1	1	1	0		3
88-111 cm							1	1	1	1		4
> 111 cm	1						163	525	126	562		1377
unknown								1	0	9		10
Total-east	1						175	528	128	572		1404
west												
< 39 cm											16	0
39-64 cm	2				15	85	1			12	25	115
65-88 cm	6			1	76	44	54	45		1	10	227
88-111 cm			1	1	307	127	94	62		14	10	606
> 111 cm	15	150	49	159	104	290	89	128	23	100	38	1107
unknown	1	3	25	86	58	11	1					185
Total-west	24	153	75	247	560	557	239	235	23	127	99	2240

1. for the Icelandic samples from 2000-2002 both liver and muscle are available as are a limited number of samples of serum.

Appendix Table BYP Samples 2. Otolith samples from the east and west Atlantic which were deposited in the sample archive in Charleston, SC or which have been collected by the University of Maryland or the Virginia Institute of Marine Science (David Secor, pers. comm.).

	1996	1997	1998	1999	2000	2001	2002	2003	Total
< 39			2					16	2
39-64		10	99	11	1	17	12	25	150
65-88	1	70	41	84	45		1	10	242
89-111	0	285	124	92	60		14	10	575
112+	85	11	95	29	23		100	38	343
unknown	2	23	7	1					33
Total	88	399	368	217	129	17	127	99	1444

Table BYP Samples 3. Frozen muscle samples potentially useful for examining reproductive hormones deposited at the archive in Charleston, SC. The Icelandic Marine Research Institute collected the samples from the east Atlantic in 2000-2002. In addition limited numbers of samples or serum area available from the Icelandic collections.

	1996	1997	1998	1999	2000	2001	2002	2003	total
east Atlantic					528	128	572		1228
west Atlantic	106	78	67	59	190	14	8	32	554

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

ICCAT Resolution on Incidental Mortality of Seabirds

At its 2002 annual meeting, ICCAT adopted a Resolution on Incidental Mortality of Seabirds (Resolution 02-14). The 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. For additional information and a copy of the resolution, visit the ICCAT website at http://www.iccat.es/. The United States included seabird information in its 2004 National Report to ICCAT.

NPOA-Seabird Executive Summary

Increased concerns have arisen about the incidental capture of non-target species in various fisheries throughout the world. Incidental capture can be economically wasteful, it impacts living marine resources, and the accidental killing of non-harvested animals may be aesthetically averse. 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.

The United States has voluntarily developed the U.S. *National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries* (NPOA-S) to fulfill a national responsibility to address seabird bycatch in longline fisheries, as requested in the *International Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries* (IPOA-S). The 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 NPOA-S is to be implemented consistent with the FAO *Code of Conduct for Responsible Fisheries* and all applicable rules of international law, and in conjunction with relevant international organizations.

Development of the NPOA-S was a collaborative effort between the National Marine Fisheries Service (NMFS), the U.S. Fish and Wildlife Service (FWS) and the Department of State (DOS), carried out in large part by the Interagency Seabird Working Group (ISWG) consisting of representatives from those three agencies. This partnership approach recognizes the individual agency management authorities covering seabird interactions with longline fisheries. NMFS manages U.S. fisheries under the authority of the Magnuson-Stevens Fishery Conservation and Management Act and the High Seas Fishing Compliance Act. FWS manages birds predominately under the authority of the Endangered Species Act and the Migratory Bird Treaty Act. In addition, DOS has the lead role in international negotiations on fisheries conservation and management issues that should help promote IPOA implementation by encouraging other nations to develop NPOAs. Given each agency's responsibilities, the NPOA-S was developed collaboratively by NMFS and FWS. This collaborative effort has increased communication between seabird specialists and fishery managers in FWS and NMFS. Maintaining this cooperation is a high priority for both agencies.

The NPOA-S contains the following themes:

1. Action Items: NMFS, with the assistance of the Regional Fishery Management Councils (Councils), the NMFS Regional Science Centers, and FWS, as appropriate, should conduct the following activities:

- *Detailed assessments of its longline fisheries for seabird bycatch within 2 years of the adoption of the NPOA-S;*
- *If a problem is found to exist within a longline fishery, measures to reduce this seabird bycatch should be implemented within 2 years. These measures should include data collection, prescription of mitigation measures, research and development of mitigation measures and methods, and outreach, education, and training about seabird bycatch; and*
- NMFS, in collaboration with the appropriate Councils and in consultation with FWS, will prepare an annual report on the status of seabird mortality for each longline fishery, including assessment information, mitigation measures, and research efforts. FWS will also provide regionally-based seabird population status information that will be included in the annual reports.

2.) Interagency Cooperation: The continuation, wherever possible, of the ongoing cooperative efforts between NMFS and FWS on seabird bycatch issues and research.

3.) International Cooperation: The United States' commitment, through the DOS, NMFS and FWS, to advocate the development of National Plans of Action within relevant international fora. The development of the NPOA-S has emphasized that all U.S. longline fisheries have unique characteristics, and that the solution to seabird bycatch issues will likely require a multi-faceted approach requiring different fishing techniques, the use of mitigating equipment, and education within the affected fisheries. Therefore, the NPOA-S does not prescribe specific mitigation measures for each longline fishery. Rather, this NPOA-S provides a framework of actions that NMFS, FWS, and the Councils, as appropriate, should undertake for each longline fishery. By working cooperatively, fishermen, managers, scientists, and the public may use this national framework to achieve a balanced solution to the seabird bycatch problem and thereby promote sustainable use of our nation's marine resources.

Detailed assessments should address the following:

- Criteria used to evaluate the need for seabird bycatch mitigation and management measures
- Longline fishing fleet data (numbers and characteristics of vessels)
- Fishing techniques data (demersal, pelagic, and other pertinent technical information)
- Fishing areas (by season and geographic location)
- Fishing effort data (seasons, species, catch, number of sets, and number of hooks/year/fishery)
- Status of seabird populations in the fishing areas, if known
- Estimated total annual seabird species-specific catch and catch-per-unit-effort (number/1,000 hooks set/species/fishery)
- Existing area and species-specific seabird bycatch mitigation measures and their effectiveness in reducing seabird bycatch
- Efforts to monitor seabird bycatch (e.g., observer program and logbooks), and
- Statement of conclusions and decision to develop and implement mitigation measures as needed.

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

The Secretary of Commerce manages Atlantic tunas, swordfish, and sharks - collectively known as highly migratory species or HMS - 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.

Atlantic pelagic longline fishery

There are approximately 80 to 100 active pelagic longline vessels currently operating in the Atlantic Ocean, Gulf of Mexico, and Caribbean Sea. Fishermen target either swordfish (at night) or yellowfin and bigeye tuna (during the day). The nighttime fishery utilizes frozen bait (mackerel or squid, predominantly) and lightsticks. The daytime fishery had utilized frozen bait predominantly along the east coast and live bait in the Gulf of Mexico. However, NMFS prohibited the use of live bait on pelagic longline vessels in the Gulf of Mexico beginning in 2000 to minimize bycatch mortality of billfish. Additionally, NMFS prohibited pelagic longline fishing in the Florida East Coast, Charleston Bump, DeSoto Canyon, and Grand Banks areas beginning in 2000 and 2001 to reduce bycatch of swordfish, billfish, and sea turtles. In August 2004, NMFS limited vessels with pelagic longline gear onboard, at all times, in all areas open to pelagic longline fishing, excluding the NED, to possessing onboard and/or using only 16/0 or larger non-offset circle hooks and/or 18/0 or larger circle hooks with an offset not to exceed 10 degrees. Only whole finfish and squid baits may be possessed and/or utilized with allowable hooks. Effective the same time, NMFS opened the NED to pelagic longline fishing and limited vessels with pelagic longline gear onboard in that area, at all times, to possessing onboard and/or using only 18/0 or larger circle hooks with an offset not to exceed 10 degrees. Only whole mackerel and squid baits may be possessed and/or utilized with allowable hooks.

NMFS attempts to achieve five percent observer coverage (by number of sets) and has achieved approximately three to five percent annually between 1992 and 2000. Increased sampling in 2001, particularly in the Northeast Distant area, increased 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. Observers collect information about seabird bycatch by species and also take photographs of the birds. In addition, fishermen are required to submit logbooks for every trip made. Logbooks do not collect specific information about seabird bycatch at this time. Commercial pelagic longline fishing occurs throughout the North and South Atlantic, and the Gulf of Mexico.

See Garrison (2005) for further description of the Pelagic Observer Program (POP) and the logbook data as it relates to the incidental take of sea turtles and marine mammals.

Atlantic bottom longline shark fishery

There are approximately 250 bottom longline shark vessels currently operating in the Atlantic Ocean, Gulf of Mexico, and Caribbean Sea. The Atlantic bottom longline fishery targets large coastal sharks, with landings dominated by sandbar and blacktip sharks. Gear characteristics vary by region, but in general, a ten-mile long monofilament bottom longline, containing about 750 hooks is fished overnight. Skates, sharks, or various finfishes are used as bait. This fishery operates subject to a limited large coastal shark quota, with a typical two to three-month long season starting in January and July. Commercial shark bottom longline fishing is concentrated in the southeastern United States and Gulf of Mexico. Vessel owners must submit logbooks for each shark fishing trip and are subject to observer coverage.

The Commercial Shark Fishery Observer Program (CSFOP) has documented approximately 4% of the entire U.S. Atlantic commercial large coastal shark landings and 1.6% of all hooks set by the shark bottom longline fishery over the first nine years of the program from 1994-2002. During the 2002 second semi-annual season and the 2003 first semi-annual season, six observers logged 311 sea days on 68 shark fishing trips aboard 22 vessels for 3.8% coverage of all commercial large coastal shark landings. During the 2002 first and second semi-annual seasons, the CSFOP observed 2.5% of all hooks reported set by the shark bottom longline fishery. Observers collect information about seabird bycatch. Starting in 2001, 20 percent of shark fishermen will be selected to submit a supplemental discard form, which includes information on seabird bycatch, as part of their standard logbook submissions.

Amendment 1 to the Fishery Management Plan for Atlantic Tunas, Swordfish, and Sharks implements a time/area closure for bottom longline gear in the South Atlantic off the coast of North Carolina. The closure will be in effect from January to July beginning in January 2005. This measure was adopted to provide protection for dusky sharks, both juveniles and adults, and juvenile sandbar sharks. Although seabird bycatch in the bottom longline fishery is virtually non-existent, such a closure could afford additional protection for seabirds in that area.

Seabird Bycatch Assessment.

Atlantic pelagic longline fishery

Observer data from 1992 through 2004 indicate that seabird bycatch is relatively low (Table 1). Since 1992, a total of 127 seabird interactions have been observed, with 93 seabirds observed killed (73.2 percent) in the Atlantic pelagic longline fishery. In 2003, there were 127 active US pelagic longline vessels operating in the Atlantic Ocean, Gulf of Mexico, and Caribbean Sea.

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 2004. Almost half of the seabirds observed have not been identified to species (n = 59). Of those seabirds identified, gulls represent the largest group (n = 34), followed by greater shearwaters (n = 23), and northern gannets (n = 8) (Table 2). Greater shearwaters and shearwater spp. experienced the highest mortality (96 percent), followed by gulls (79.4 percent), and unidentified seabirds (67.8 percent). Northern gannets had the lowest mortality rate (12.5 percent).

The Mid-Atlantic Bight experienced the highest number of seabirds observed caught (n = 60) and killed (n = 42; 90 percent) (Table 3). The Northeast Coastal area had the second highest number observed caught (n = 35) and the fifth highest bycatch mortality (48.6 percent). The South Atlantic Bight and Northeast Distant had lower numbers of seabirds observed caught (n = 15 each), but higher mortality rates (80 and 73.3 percent).

Preliminary estimates of expanded seabird bycatch and bycatch rates from 1995-2002 varied by year and species with no apparent pattern (Tables 4 and 5). The estimated number of all seabirds caught and discarded dead ranged from 0 to 468 per year, while live discards ranged from 0 to 292 per year. The annual bycatch rate of seabirds discarded dead ranged from 0 to 0.0486 per 1,000 hooks while live discards ranged from 0 to 0.0303 per 1,000 hooks. See Garrison (2005) for further description of the pelagic longline observer and logbook data.

Other preliminary estimates of the annual seabird bycatch of the US Atlantic longline fleet are provided in a draft report by Hata (2005). In these estimates, annual seabird bycatch for the period 1986 through 2003 varied from a low of 0 for 1996 to a high of 1,109 for 1997, averaging about 220-240 birds per year (Tables 6 and 7). Based on estimates for this entire period, 32.45% were alive and 67.55% were dead. Seabird capture rates within the Northeast Central, Mid-Atlantic Bight, and South Atlantic Bight were 0.082, 0.052, and 0.020 birds/set, respectively, equating to 0.105, 0.078, and 0.036 birds/1000 hooks. Averaged over all years and regions, the overall catch rate was 0.027 birds/1000 hooks. Hata (2005) found that number of longline sets, number of hooks deployed, and number of hooks per hour in the POP data were highly correlated, and he based his extrapolation to the logbook effort on the number of seabirds caught per set. This is one reason why his estimates differ somewhat from the ones provided in Tables 4 and 5, which are extrapolations based on the number caught per hook.

Hata (2005) noted that the seabird catch was clustered within sets and within trips. A total of 6400 longline sets was observed in the Pelagic Observer Program between 1992 and 2004, and 51 sets were responsible for all the seabird captures--113. Twenty-nine sets caught only one seabird, whereas 22 sets caught more than one, and as many as nine birds. The 51 occurrences (sets in which seabirds were captured) were distributed over only 29 trips, with seabirds caught on as many as five sets during a trip. One seabird was caught in each of 14 trips, but the one trip with five occurrences accounted for 18 seabirds. The Hata report is available at the Southeast Fisheries Science Center (contact Dr. Joan Browder (joan.browder@noaa.gov).

Table 1. Seabird Bycatch in the U.S. Atlantic Pelagic Longline Fishery, 1992-2004. Source: NMFS Pelagic longline fishery observer program (POP).

Year	Quarter	Area	Type of Bird	Status	
				Alive	Dead
1992	4	MAB	GULL		4
1992	4	MAB	GREATER SHEARWATER		2
1993	1	SAB	NORTHERN GANNET	2	
1993	1	MAB	NORTHERN GANNET	2	
1993	1	MAB	BLACK BACKED GULL	1	3
1993	4	MAB	GULL	1	
1994	2	MAB	GREATER SHEARWATER		3
1994	3	MAB	GREATER SHEARWATER		1
1994	4	MAB	GULL		4
1994	4	MAB	HERRING GULL		7
1995	3	MAB	SEABIRD		5
1995	3	GOM	SEABIRD		1
1995	4	MAB	STORM PETREL		1
1995	4	NEC	NORTHERN GANNET	2	
1995	4	NEC	GULL	1	
1997	2	SAB	SEABIRD		11
1997	3	MAB	SEABIRD		1
1997	3	NEC	SEABIRD	15	6
1998	1	MAB	SEABIRD		7
1998	3	NEC	SEABIRD		1
1999	2	SAB	SEABIRD		1
2000	2	SAB	LAUGHING GULL	1	
2000	4	NEC	NORTHERN GANNET		1
2001	2	NEC	GREATER SHEARWATER		7
2001	3	NEC	GREATER SHEARWATER		1
2002	3	NEC	SEABIRD		1
2002	3	NED	GREATER SHEARWATER		4
2002	3	NED	SEABIRD	3	1
2002	3	NED	SHEARWATER SPP		1
2002	4	NED	NORTHERN GANNET	1	
2002	4	NED	SHEARWATER SPP		1
2002	4	NED	SEABIRD		2
2002	4	MAB	GULL	3	
2002	4	MAB	GULL		4
2003	1	GOM	SEABIRD	1	
2003	3	NED	SEABIRD		1
2003	3	MAB	SEABIRD		1
2004	1	MAB	GULL		5
2004	3	MAB	GREATER SHEARWATER	1	4
2004	4	NED	SEABIRD		1

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

Table 2. Status of Seabird Bycatch in the U.S. Atlantic Pelagic Longline Fishery, 1992-2004. Source: NMFS Pelagic longline fishery observer program (POP).

Species	Release Status		Total	Percent Dead
	Dead	Alive		
GULLS (incl. Blackback, Herring, Laughing, and unid. gulls)	27	7	34	79.4%
UNIDENTIFIED SEABIRD	40	19	59	67.8%
GREATER SHEARWATER	22	1	23	95.6%
SHEARWATER SPP	2	0	2	100%
NORTHERN GANNET	1	7	8	12.5%
STORM PETREL	1	0	1	100%
TOTAL ALL SEABIRDS	93	34	127	73.2%

Table 3. Seabird bycatch in the U.S. Atlantic Pelagic Longline Fishery by area, 1992-2004. Source: NMFS Pelagic longline fishery observer program (POP).

Area	**Total Caught**	**Released Alive**	**Released Dead**	**Percent Dead**
CAR	0	0	0	0
FEC	0	0	0	0
GOM	2	1	1	50
SAB	15	3	12	80
MAB	60	8	52	86.7
NEC	35	18	17	48.6
NED	15	4	11	73.3
SAR	0	0	0	0
NCA	0	0	0	0
TUN	0	0	0	0
TUS	0	0	0	0
All Areas	127	34	93	73.2

Atlantic bottom longline shark fishery

One pelican has been observed killed in the Atlantic bottom longline shark fishery from 1994 through 2004. The pelican was caught in January 1995 off the Florida Gulf Coast (between 25^{o} 18.68 N, 81^{o} 35.47 W and 25^{o} 19.11 N, 81^{o} 23.83 W) (G. Burgess, University of Florida, Commercial Shark Fishery Observer Program, pers. comm., 2001). As such, expanded estimates of seabird bycatch or bycatch rates have not been calculated for the bottom longline fishery.

Table 4. **Expanded estimates of seabird bycatch and bycatch rates (discarded dead) in the U.S. Atlantic pelagic longline fishery, 1995-2002.** Source: NMFS Pelagic longline fishery observer program.

Species	1995		1996		1997		1998		1999		2000		2001		2002		2003		2004	
	Obs	**Est**	**Obs**	**Est**	**Obs**	**Est**	**Obs**	**Est**	**Obs**	**Est**	**Obs**	**Est**	**Obs**	**Est**	**Obs**	**Est**	**Obs**	**Est**	**Obs**	**Est**
Unid seabirds	6	134	0	0	18	468	8	155	1	14	0	0	0	0	3	3	2	8	1	4
Gulls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	14	0	0	5	48
Shearwaters	0	0	0	0	0	0	0	0	0	0	0	0	8	210	6	6	0	0	4	59
Northern gannet	0	0	0	0	0	0	0	0	0	0	1	11	0	0	0	0	0	0	0	0
Storm petrel	1	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All Seabirds	7	170	0	0	18	468	8	155	1	14	1	11	8	210	10	23	2	8	10	111
Number of hooks observed (x1000)	484.9		223.4		318.6		181		289		322.3		454.9		706.7		1014.4		504.9	
Reported number of hooks set (x1000)	10182.3		10310.7		9637.8		8019.2		7901.8		7975.5		7564		7150.2		7008.5		7186	
Total seabird catch rate (per 1000 hooks)	0.0167		0		0.0486		0.0193		0.0018		0.0014		0.0278		0.0032		0.0011		0.0155	

Table 5. Expanded estimates of seabird bycatch and bycatch rates (discarded alive) in the U.S. Atlantic pelagic longline fishery, 1995-2002. Source: NMFS Pelagic longline fishery observer program.

Species	**1995**		**1996**		**1997**		**1998**		**1999**		**2000**		**2001**		**2002**		**2003**		**2004**	
	Obs	**Est**	**Obs**	**Est**	**Obs**	**Est**	**Obs**	**Est**	**Obs**	**Est**	**Obs**	**Est**	**Obs**	**Est**	**Obs**	**Est**	**Obs**	**Est**	**Obs**	**Est**
Unid seabirds	0	0	0	0	15	292	0	0	0	0	0	0	0	0	3	3	1	13	0	0
Gulls	1	15	0	0	0	0	0	0	0	0	1	18	0	0	6	83	0	0	0	0
Shearwaters	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15
Northern gannet	2	30	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
Storm petrel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All Seabirds	3	44	0	0	15	292	0	0	0	0	1	18	0	0	10	87	1	13	1	15
Number of hooks observed (x1000)	484.9		223.4		318.6		181		289		322.3		454.9		706.7		1014.4		504.9	
Reported number of hooks set (x1000)	10182.3		10310.7		9637.8		8019.2		7901.8		7975.5		7564		7150.2		7008.5		7186	
Total seabird catch rate (per 1000 hooks)	0.0044		0		0.0303		0		0		0.0023		0		0.0122		0.0019		0.0021	

Table 6. Expanded estimates of seabird bycatch (discarded dead) in the U.S. Atlantic pelagic longline fishery, 1986-2003. Source: Hata (2005) (draft report in review).

Year	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
Gulls							80	50	206	0					0		36	
Gannets								0		0					22			
Seabirds										140		623	380	28			36	20
Shearwaters							80		74							283		
Storm-petrels										24								
All	13	93	93	132	156	149	160	50	280	164	0	623	380	28	22	283	71	20

Table 7. Expanded estimates of seabird bycatch (discarded alive) in the U.S. Atlantic pelagic longline fishery, 1986-2003. Source: Hata (2005) (draft report in review).

Year	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
Gulls							80	34	0	24					22		212	
Gannets								83		48					0			
Seabirds										0		486	0	0			0	19
Shearwaters							0		0							0		
Storm-petrels										0								
All	6	43	43	62	73	70	80	117	0	71	0	486	0	0	22	0	213	19

Current Seabird Mitigation Efforts

No management measures are currently in place for seabird protection in either of these fisheries. 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. Such closures may positively affect seabirds. Evidence has been presented at international workshops that has indicated that, if necessary, streamer lines and line shooters are effective in reducing the bycatch of seabirds in longline fisheries.

Although not initiated specifically for seabird protection, the recently initiated mandatory requirement for the use of circle hooks in the U.S. Western North Atlantic fishery may reduce the seabird bycatch. This is suggested by a recent draft report (Hata 2005 that compared the two birds caught on two of 598 sets that exclusively used circle hooks to the 58 birds caught on 28 of the 2727 sets that used J hooks and found that the number of seabirds caught on J hooks was greater and the number caught on circle hooks was less, than would be expected by chance (χ^2 = 7.89, df = 1, p=0.005). The data used in the Hata (2005) analysis included the data from the NED experiment of Watson et al. (2005). Other pelagic longline fisheries where circle hooks are being employed should be examined to confirm the beneficial effect on seabird bycatch suggested by Hata (2005).

The Hata (2005) study suggested that the use of additional line weights might reduce the seabird bycatch. For the five regions in which seabird captures occurred, the proportion of sets with captures in sets using extra line weights (4%; 2 of 51 sets) was much lower than the proportion of sets with captures in all other sets (28%; 1405 of 4950 sets). Other studies suggest that seabirds take baits from hooks floating at or near the surface during setting and, to a lesser degree, during gear haul and that additional line weights increase hook sinking rate and put the hooks out of range of surface-feeding seabirds and below the range of diving seabirds to reduce captures (e.g., see Brothers and Foster 1997). While the use of thawed baits was also noted to reduce the bycatch in other studies, no effect of thawed bait was noted in the Hata (2005) study.

Status of Seabird Populations

Population estimates for the Western North Atlantic are being compiled for those taxa specifically noted in the U.S. Atlantic longline catch, as well as other seabird species of the region (David Lee, in prep.). The identified catch includes only Northern Gannet, Greater Shearwater, and three gull species: Herring, Laughing, and Great Black-Backed. The Greater Shearwater is classified as a species at “high” risk in the North American Waterbird Conservation Plan (Kushlan et al. 2002), although Williams (1984) estimated the breeding population at about 5 million pairs. The classification may be based on the tendency of this species to aggregate in large groups for breeding (nests are concentrated on a few small islands in the South Atlantic) and migration, which may place significant portions of the population at the same place at the same time. The other four named species are classified as at “low” risk or “not currently at risk” in Kushlan et al. (2002), who estimate their North and Central American and Caribbean populations at 248,000 breeders (herring gull), 528,000-538,000 breeders (laughing gull), and 121,430 breeders (Great Black-Backed Gull) and 155,456 breeders (Northern Gannet). (All but the Herring Gull are almost exclusively in the Atlantic Ocean and Gulf of Mexico). On the other hand, based on Brown et al. (1984), Lee (in prep) estimates that there are about 33,000 pairs of Northern Gannets in the Western North Atlantic. Gannet age groups migrate separately, and some age groups might be more vulnerable to the longline than others. Catches of gulls, shearwaters and storm petrels were noted in the POP, but not identified to species. These groups contain both common and highly imperiled species. The majority of the catch was not identified even to general taxa. Adequately evaluating potential risks to seabird populations depends upon improving the identification of the seabird bycatch.

Conclusion

Bycatch of seabirds in Atlantic HMS pelagic and bottom longline fisheries is relatively minimal and there does not appear to be a significant problem with seabird bycatch in these fisheries. Accordingly, no mitigation measures are proposed at this time. 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. NMFS will reassess seabird bycatch in these fisheries as new information becomes available.

Contact

For additional information about the US NPOA, contact:

Kim Rivera
NOAA Fisheries
National Seabird Coordinator
Protected Resources Division
PO Box 21668
Juneau, Alaska, 99802 USA
907-586-7424; 907-586-7012 (fax)
Kim.Rivera@noaa.gov
http://www.fakr.noaa.gov/protectedresources/seabirds/national.htm

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References Cited

Brothers, N. P. and A. B. Foster. 1997. Seabird catch rates: an assessment of causes and solutions in Australia's domestic tuna longline fishery. Mar. Ornith. 25:37-42.

Brown, R. G. B. Brown and D. N. Nettleship. 1984. The seabirds of Northeastern North America: their present status and conservation requirements. Pp 85-100. In J. P. Coxall, P. G. Evans and R. W. Schreiber (eds.). Status and Conservation of the World's Seabirds. ICBP Tech. Publ., No. 2. 778 p.

Garrison, L. P. 2005. Estimated bycatch of marine mammals and turtles in the Atlantic. NOAA Technical Memorandum NMFS-SEFSC-531. 57 pp.

Hata, D. N. 2005. Incidental captures of seabirds in the U.S. Atlantic pelagic longline fishery. Draft report to the Southeast Fisheries Science Center, Miami, FL, from Virginia Polytechnical Institute, Blacksburg, VA. 35 pp.

Kushlan, J. A., M. J. Steinkamp, K. C. Parsons, J. Capp, M. Acosta-Cruz, M. Coulter, I. Davidson, L. Dickson, N. Edelson, R. Elliot, R. M. Erwin, S. Hatch, S. Kress, R. Milko, S. Miller, K. Mills, R. Paul, R. Phillips, J. E. Saliva, B. Sydeman, J. Trapp, J. Wheeler, and K. Wohl. 2002. Waterbird Conservation for the Americas: The North American Waterbird Conservation Plan, Version 1. Waterbird Conservation for the Americas, Washington, DC, U.S.A., 78 pp.

Lee, D. S. (in prep.) Populations of Seabirds in the Western North Atlantic. Report to the Southeast Fisheries Science Center.

Williams, A. J. 1984. The status and conservation of seabirds on some islands in the African sector of the Southern Ocean. Pp. 627-635. In J. P. Coxall, P. G. Evans and R. W. Schreiber (eds). Status and Conservation of the World's Seabirds. ICBP Tech. Publ., No. 2. 778 p.