U.S. National Report to ICCAT, 2002

U.S. Department of Commerce, NOAA-Fisheries
September 2002

1. NATIONAL FISHERIES INFORMATION

Total (preliminary) reported U.S. catch of tuna and tuna-like fishes (including swordfish, but excluding other billfishes) in 2001 was 25,747 MT, an increase of about 6% from 24,202 MT in 2000. Estimated swordfish catch (including estimated dead discards) decreased 913 MT to 2,568 MT, and provisional landings from the U.S. fishery for yellowfin in the Gulf of Mexico decreased in 2001 to 2,043 MT from 2,214 MT in 2000. The estimated 2001 Gulf of Mexico landings of yellowfin tuna accounted for about 30% of the estimated total U.S. yellowfin landings in 2001. U.S. vessels fishing in the northwest Atlantic landed an estimated 1,583 MT of bluefin, an increase of 370 MT compared to 2000. Provisional skipjack landings increased by 26 MT to 70 MT from 2000 to 2001, estimated bigeye landings increased by 511 MT compared to 2000 to an estimated 1,085 MT in 2001, and estimated albacore landings decreased from 2000 to 2001 by 83 MT to 324 MT.

2. STATISTICS AND RESEARCH

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 2001 and 2002 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 7,785 billfishes (swordfish, marlins, sailfish, and spearfish) and 490 tunas in 2001. This represents a decrease of 15% for billfish and a 42% decrease for tunas from 2000 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 6,703 MT in 2001, from the 2000 landings estimate of 7,051 MT (Appendix Table 2.1-YFT). The 2001 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 landings were due to estimated rod & reel catches of recreational anglers in the NW Atlantic (3,690 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 1000 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 44 MT in 2000 to 70 MT in 2001 (Appendix Table 2.1-SKJ). The largest increase in catch was off the U.S. east coast (NW Atlantic) between Cape Hatteras and Long Island. 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. The majority of U.S. landings of this species comes from longline vessels fishing off the east coast of the U.S. in the area from Cape Hatteras, North Carolina to Massachusetts. These landings accounted for 47% of the U.S. bigeye catch in 2001. Total reported catches and landings (preliminary) for 2001 increased by 89% from 574 MT in 2000 to 1085 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. vessels fishing in the northwest Atlantic (including the Gulf of Mexico) in 2001 landed an estimated 1,583 MT of bluefin tuna. Those estimated landings represent an increase of 371 MT from the 2000 landings. The 2001 landings by gear were: 196 MT by purse seine, 102 MT by harpoon, 9 MT by handline, 38 MT by longline (of which 20 MT were from the Gulf of Mexico), 1238 MT by rod and reel (of which, 243 MT was the preliminary estimate for bluefin less than 145cm SFL from off the northeastern U.S.), and less than 1 MT was taken by other gears.

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 size categories than reported above. The preliminary estimates for the 2001 rod and reel fishery off the northeastern U.S. (including the North Carolina winter fishery) for landings in several size categories were 3,470 fish 66-114 cm, 4308 fish 115-144 cm and 1599 fish 145-177 cm (an estimated 80, 163, and 124 MT, respectively). An additional 1360 fish <66 cm and 3 fish 66-114 cm (an estimated 6 and 0.05 MT, respectively) were discarded dead. 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.

Logbook tallies of dead discarded bluefin for year 2001, amount to 25 MT. Other estimates of this tonnage based on observer data are typically higher than the logbook tallies. The United States sought scientific review of the methods applied for estimating dead discarded catch of bluefin in 2001. This review took place in a 2-stage fashion. In the first stage of the review, three independent scientists contracted through the University of Miami's Center for Independent Experts (CIE) were asked to comment on the approaches used to estimate marine turtle and other species bycatches (the methods used for turtles and bluefin tuna were the same) as part of a broader review of marine turtle stock assessment.

None of these reviewers provided recommendations for improvement in the bycatch estimation methods applied. Because this review was judged to be too broad for detailed comments and recommendations for improvements on the methodological approach, a second, and more focused review was sought from an additional 2 independent scientists, again through the CIE. These review comments were received in mid-September, 2001, and as a result, scientists from the CEFAS Lowestoft Laboratory have been contracted to conduct further analysis of the logbook and observer data for the purpose of estimating bluefin (and other species) dead discarded catch. A reviewer recommended continuation of the use of logbook tallies for monitoring U.S. compliance with the negotiated dead discard allowance for the west Atlantic bluefin tuna recovery plan until the technical recommendations for improvements in the statistical methods for estimating discards were incorporated. As a consequence of this recommendation, the logbook tally values for dead discards have been incorporated into the ICCAT database for the period 1987-2001.

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. Caribbean landings increased in 1995 to make up over 14% of the total, but U.S. landings from the Caribbean have remained below 4% of the total each year during 1996-2001. Nominal catch rate information from U.S. longline logbook reports are shown in Appendix Figure 2.1-ALB. Estimated total catches of albacore were 324 MT in 2001, a decrease of 83 MT from 2000 which was primarily due to a decrease in estimated rod and reel catches from 251 MT in 2000 to 122 MT in 2001 (Appendix Table 2.2-ALB).

2.1.3 Swordfish Fishery Statistics

For 2001 the provisional estimate of U.S. vessel landings and dead discards of swordfish was 2,568 MT (Appendix Table 2.3-SWO). This estimate is 27% lower than the estimate of 3,497 MT for 2000. The provisional landings, excluding discard estimates, by ICCAT area for 2001 (compared to 2000) were: 426 MT (503 MT) from the Gulf of Mexico (Area 91); 1,057 MT (1,278MT) from the northwest Atlantic (Area 92); 332 MT (330 MT) from the Caribbean Sea (Area 93); and 402 MT (752 MT) from the North Central Atlantic (Area 94A), and 43 MT (142 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. The observer sampling data, in combination with logbook reported effort levels, support estimates of approximately 27,321 fish discarded dead in 2001, representing an estimated 308 MT of swordfish, overall. For the North Atlantic, the estimated tonnage discarded dead in 2001 is 293 MT, of which 288 is estimated due to longline gear. Overall, the estimates of dead discarded catch declined by 37% (184MT) compared to the 2000 level. These reductions(both in landed catch and in discarded catch) are thought to in large part be due to the effects of time-area closures and other domestic management actions in place during 2001.

Total weight of swordfish sampled for sizing U.S. landings by longline, harpoon, otter trawl, and handline was 2141 MT, 7 MT, 2 MT, and 5 MT in 2001. The weight of sampled swordfish landings in 2001 were 98%, 100%, 75%, and 60% of the U.S. total reported annual landings of swordfish for longline, harpoon, otter trawl, and handline. Again, incorporation of late reports into the estimated 2001 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 statistical surveys of recreational anglers, range from about 5-21

MT per year for the period 1996-2001.

2.1.4 Marlins and Sailfish Fishery Statistics

Blue marlin, white marlin, and sailfish are landed by U.S recreational rod and reel fishermen and are a by-catch of the U.S. commercial tuna and swordfish longline fisheries. The U.S. Fisheries Management Plan for Atlantic Billfishes was implemented in October, 1988. The Plan allows billfish that are caught by recreational gear (rod and reel) to be landed only if the fish is larger than the minimum size specified for each species covered by the Plan. Recreational landings of each billfish species are estimated using: (a) the SEFSC Recreational Billfish Survey (RBS) which provides the number of billfish caught during tournaments held along the southeastern U.S. coast (south of 35^0 N latitude), in the Gulf of Mexico, and U.S. Caribbean Sea regions (i.e., U.S. Virgin Islands and Puerto Rico); and (b) the Large Pelagics Recreational Survey (LPS) conducted by the National Marine Fisheries Service which provides estimates of recreational billfish harvest from waters along the northeastern U.S. (north of 35^o N latitude). Estimates of landed recreational catch of these species by non-tournament fishers are not well estimated and for this reason, the landings reported for recreational rod and reel fishers are thought to be conservative. Studies conducted indicate that use of a time-series running average from the US general marine recreational fishing survey in combination with data from the RBS and LPS surveys may provide the most reliable estimates of overall catch and landings for marlins.

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

The preliminary estimates of 2001 U.S. recreational catches for these billfish species, combining the geographical areas of the Gulf of Mexico (Area 91), the northwestern Atlantic Ocean west of the 60^o W longitude (Area 92), and the Caribbean Sea (Area 93) are: 16.4 MT for blue marlin, 3.1 MT for white marlin, and 61.7 MT for sailfish. The estimates for 2000 were 24.1 MT, 0.2 MT, and 2.0 MT, respectively, for the three species. The estimates of the U.S. recreational catch (landings) do not include any estimates of mortality of released (or tagged and released) fish. Additionally, these landings include survey estimates of non-tournament billfish mortality and survey estimates from tournaments, but do not constitute a census of all tournaments. Because some components of the charter boat and non-tournament recreational fishery are not surveyed, the recreational catches are considered minimum estimates. Therefore, the rod and reel landings presented in Appendix Table 2.4-BIL include a '?' to represent the unknown quantities of recreational catch of billfish not recorded.

Estimates of the billfish by-catch discarded dead in the U.S. commercial longline and other commercial fisheries for 2000 were 59.6 MT for blue marlin, 40.8 MT for white marlin, and 45.2 MT for sailfish. The estimated 2001 U.S. discarded dead bycatch was 22.4 MT, 16.9MT, and 10.8 MT, respectively for the three species. Overall, these values represent decreases of 62.4%, 58.6%, and 76.0% of the 2000 estimated discard tonnage for these three species, respectively. As for swordfish, these reductions in discarded catch are thought to, in large part, be due to the effects of time-area closures and other domestic management actions in place during 2001. The catches and landings (MT) by species, area, and gear, for 1998-2001 are presented in Appendix Table 2.4-BIL.

Information from a statistical survey (Marine Recreational Fishery Statistics Survey, MRFSS) of the US recreational harvesting sector conducted over the US northeast and southeast coasts, continues to be under evaluation for its application to estimating billfish catches by recreational fishers. Preliminary results for marlins were presented at the 2000 SCRS meeting in SCRS/00/52 and again for white marlin at the 2002 SCRS meeting in SCRS/02/74. Although billfish are considered "rare event" species in this survey and accordingly the estimates may suffer from bias and imprecision, they do provide a possible basis for evaluating the potential degree of conservatism in the values reported in Appendix Table 2.4 BIL for recreational (rod and reel) harvest. These estimates were predictably higher than the previous RBS estimate due to more complete coverage of the recreational fishery for billfish by the MRFSS. For sailfish, the MRFSS based estimates of tonnage landed are considerably higher than counted through the RBS, expectedly so since the tournaments monitored by the RBS are known to represent only a fraction of the recreational fleet that catches sailfish. That the rare event nature of sailfish catch compared to other species catches could lead to some bias in estimates cannot be ruled out. However, for the purposes of assessment of sailfish, it is recommended that the assessment use the MRFSS-based estimates of sailfish harvested to examine the sensitivity of the assessment to these estimates. Table 2.4-BIL for 2001 reflects estimates from the MRFSS for sailfish during times and in areas not covered by either the LPS or the RBS. For 2001, Table 2.4 BIL also reflects estimates of white marlin recreational landings resulting from the methodology used in SCRS/02/74.

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 implemenented 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 any longer considered overfished.

Annual yields of king mackerel have ranged from 4,365 MT to 8,772 MT between 1983 and 2001 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 2001 with the average catch of about 4,500 MT since 1995. 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. Critical research concerns regarding mackerels are sampling concerns related to adequate coverage of the age structure of the stocks and increasing the precision associated with the mackerel assessment abundance indices.

2.1.6 Shark Fishery Statistics

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 up to 2001 (although the data for 2001 are preliminary and subject to change) in anticipation of future assessments of pelagic sharks by ICCAT. Commercial landings of pelagic sharks steadily increased from the early 1980's, peaked in 1995, and have shown a declining trend since that year (Appendix Table 2.6a-SHK). Recreational landings in numbers estimated from the MRFSS survey during 1981-2001 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 the last year of data (but estimates for 2001 are preliminary; Appendix Table 2.6a-SHK). Pelagic longline dead discards also fluctuated between 1987 and 2001, with a minimum of about 3,500 fish in 1999 and a maximum of about 30,500 fish in 1993, but show a declining trend overall. 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 5,000 fish according to available estimates (Appendix Table 2.6c-SHK). Commercial landings from 1995 to 2001 in the quota monitoring and general canvass data collection programs are also assigned to an unclassified "mako" category, in addition to the "shortfin mako" category. Adding these landings of unclassified makos, which are likely to be shortfin makos, would increase commercial landings for this species, but would not affect significantly total catches. Most of the landings were attributable to the recreational fishery, whose landings in numbers peaked in 1985 (as for blue shark) 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. Total catches ranged from less than 4,000 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

Research continued on genetic discreteness of large pelagic fishes in the Atlantic, larval surveys for bluefin tuna and other large pelagics in the Gulf of Mexico, new methods for estimating and indexing abundance, robust estimation techniques for sequential population analyses, and estimating discards based on direct observations by scientific fishery observers. Research was also conducted on approaches for characterization of uncertainty in assessments and methods for translating that uncertainty into risk levels associated with alternative approaches. U.S. scientists also continued to coordinate efforts for the ICCAT Enhanced Research Program for Billfish and for the Bluefin Year Program.. Collaborative research with scientists from ICCAT member nations and cooperating parties continues.

2.2.1 Bluefin Tuna Research

As part of its commitment to the Bluefin Program, research supported by the U.S. has concentrated on ichthyoplankton sampling, reproductive biology, methods to evaluate hypotheses about movement patterns, spawning area fidelity and stock structure investigations. A BYP planning meeting was hosted at the SEFSC in May, 2001, to review activities of eastern and western researchers relative to further study of bluefin reproductive biology in the central North Atlantic and in the Mediterranean. The results of the initial survey of the Central North Atlantic study area were provided in SCRS/01/31 (rev). An information release relating to year 2002 field sampling in the Central North Atlantic is provided in the Appendix. Samples collected and available for collaborative research, in support of the BYP research plans are presented in Appendix Tables BYP-1 to BYP-4.

Ichthyoplankton surveys in the Gulf of Mexico during the bluefin spawning season were continued in 2001 and 2002. Data resulting from these surveys which began in 1977 are used to develop a fishery-independent abundance index of spawning west Atlantic bluefin tuna. This index has continued to provide one measure of bluefin abundance that is used in SCRS assessments of the status of the resource (SCRS/02/91).

Studies related to genetic evaluations of the number of fishery management units of Atlantic bluefin are being conducted at several laboratories in the United States. The National Oceanographic and Atmospheric Administration laboratory in Charleston, S.C. is acting as a sample archive center and has tissues from all bluefin collected for stock structure research by the National Marine Fisheries Service since 1996 and some or all samples collected by researchers from various institutions including the University of South Carolina, the Virginia Institute of Marine Science, the University of Maryland and the Massachusetts Department of Marine Fisheries. A summary of tissues collected though mid 2002 is presented in Appendix Tables BYP-1 to BYP-4.

Scientists at Virginia Institute of Marine Science and Texas A&M University continue to search for heterogeneous micro-satellite loci. In addition they have begun screening adult bluefin from the east and western management areas for micro-satellite frequencies. Regional and temporal heterogeneity of allele frequencies have been found for several loci, but consistent differences between adults captured in the eastern and western Atlantic have not been found.

Efforts are underway to identify bluefin larvae for possible use in genetic analyses. During the ichthyoplankton surveys in the Gulf of Mexico during the bluefin spawning season two types of gear (bongo and neuston) are fished; the bongo samples have been used for the bluefin larval index. For about a decade two neuston nets have been fished at each station and the samples from one net have been preserved in ethanol. During 2001 and 2002 neuston samples which were preserved only in ethanol and collected throughout the 1990s have been sent for sorting. Those sent in 2001 were from 1995-2000 and have been sorted, but the identifications have not yet been verified. Samples sent for sorting in 2002 were from 1992-1994 and 2001. These samples in addition to samples already made available from 1994 when the joint cruise with the Japanese occurred, may be useful in stock discrimination analyses.

Research on bluefin tuna movement patterns using electronic tags, and on the associated methodology, was continued in 2001 and 2002. Tagging activities continued off North Carolina (scientists from Stanford University, Monterey Bay Aquarium and N.M.F.S.) and off northeast North

America (by scientists from (1) New England Aquarium, Massachusetts Division of Marine Fisheries. and D.F.O. from Canada and (2) Stanford University and the Monterey Bay Aquarium). Additionally, researchers from Stanford University and the Monterey Bay Aquarium continued tagging bluefin tuna in the Gulf of Mexico, successfully releasing 8 fish in 2002. SCRS/02/92 reported upon the most recent results obtained from electronic tagging of more than 500 Atlantic bluefin tuna with implantable archival and pop-up satellite archival tags by the Stanford University team.

Research on the feasibility of using otolith chemistry to discriminate bluefin stock continues at Texas A&M University and the University of Maryland continued. Current research is focused on preconcentration procedures to eliminate chemical interferences and increase sample classfication accuracy. Additionally stable isotopes (d13C and d18O) have been used as recorders of environmental conditions and are being investigated for possible use in determining stock structure. Preliminary results for one isotope (d18O) for 1 year old bluefin from the Mediterranean and the west Atlantic were markedly different with cross-validated classification success of 100%, indicating that nursery area could be accurately predicted.

Scientists from the New England Aquarium conducted studies on a variety of topics related to bluefin tuna in addition to the tagging activities and extensive participation in the exploratory research in the central Atlantic mention above. Data from pop-up satellite tags is being studied to determine the reliability of the geographic information for understanding bluefin movement and behavior. Studies of the relationship between bluefin schools and surface water temperatures has been conducted. Additionally research on the bluefin movement patterns and their relationship to the environment have been investigated with respect to the utility of spotter aircraft observations for indicators of abundance. Research is also continuing on bluefin energetics, reproduction and predator-prey relations.

Several documents considered the implications of mixing between Eastern and Western stocks. SCRS/02/93 examines recapture rates of tagged fish in three areas: 1) West Atlantic, 2) Northeast Central Atlantic, and 3) East Atlantic and Mediterranean. The use of the ICCAT tagging data for identifiying stock mixing in the Northeast Central area is discussed, as is the possibility of differing reporting rates between areas. SCRS/02/87 assumed a six strata spatial structure (as identified at the September 2001 ICCAT workshop on bluefin mixing) and applied a simple age-aggregated (production) model approach with inter-stratum mixing. The results suggest that, with or without mixing, the 1997 catch levels of bluefin in the western Atlantic are sustainable; however, those in the east for 1997 are well above sustainable levels and need substantial reduction. Across a wide range of model input parameter values, even at relatively modest levels of mixing the fishery in the west is predicted to be adversely impacted unless reduction in the east takes place. In SCRS/02/88, a multi-area, fleet-disaggregated, age-structured population dynamics model is used to evaluate the effectiveness of existing and alternative management measures under different mixing scenarios. The model simulates the dynamics of the two bluefin tuna stocks in the North Atlantic and of the fisheries that target them. Results indicate that assessment results can be affected considerably by the level of mixing, age-specific movement patterns, and gear selectivities.

SCRS/02/86 identified the some improvements for the ADAPT VPA assessment and projection computations carried out at the 2000 assessment, related to plus-group mass and how this was taken into account in MSY computations. Abundance indices were developed using Canadian fishery data (SCRS/02/81), U.S. longline data (SCRS/02/90) and U.S. rod and reel data (SCRS/02/89) for a range of size classes of bluefin tuna.

2.2.2 Swordfish Research

Data from observer samples were compared against self-reported information in 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 2002 SCRS. (SCRS/02/117).

Swordfish catch, size and catch rate patterns were examined to identify times and areas where closures would be most likely to reduce the mortality of undersized swordfish in the Atlantic, Gulf of Mexico and Caribbean(SCRS/02/118).

An age-structured and partially spatially-structured population dynamics model was used to evaluate the effectiveness of the established closed area in the Western Atlantic and of closed areas in general, as a management tool for the regulation of the North Atlantic swordfish fishery and stock rebuilding (SCRS/02/119).

Fisher reported and observed swordfish catch, size and catch rate patterns through 2000 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/02/115)and for North Atlantic using data from swordfish longline fleets from the United States, Spain, Canada, and Japan (SCRS/02/116).

2.2.3 Yellowfin Tuna Research

Several collaborative studies were conducted by U.S. scientists in cooperation with scientists from other countries. Cooperative research by the U.S. NMFS and the INP in Mexico is expected to continue. Cooperative research plans include further development of abundance indices for sharks and other tunas, as well as the refinement of the yellowfin tuna indices as additional data becomes available.

Cooperative research on yellowfin tuna abundance indices, catch at age, and life-history studies is also continuing with Venezuelan scientists.

2.2.4 Albacore Research

The cooperative research initiated by the U.S. NMFS and the IEO of Spain in 1993 continued. In 1999 the effort was extended to analyze the catch per unit of effort data for the Spanish troll and baitboat fisheries using the general linear modeling approach. Further training sessions on this topic also took place in late 2000 and was extended to standardization of eastern Atlantic bluefin tuna catch rate time series in early 2001. A U.S. scientist also provided training to Spanish IEO and other ICCAT country scientists in mid-2001.

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 makerels by U.S. fishermen is very low. The focus of research is collection of primary fishery catch statistics, and biostatistical sample data, fishery age samples, and abundance indices. Because assessment and management are by necessity by geographical units, continued research on migration of king mackerel in particular is important.

2.2.6 Shark Research

Research on Atlantic pelagic sharks continued to be conducted in support of the Fishery Management Plan for Atlantic Tunas, Swordfish and Sharks, and ICCAT. Two NMFS scientists were invited to attend a North Atlantic blue shark Discussion Meeting organized by the Irish Marine Institute in Dublin, Ireland, in January 24-25, 2002. The objectives of the meeting were to further cooperation between ICES (International Council for the Exploration of the Seas) and ICCAT, on the assessment of pelagic sharks in the north Atlantic, as well as enhancing the links between researchers and institutes involved in pelagic shark assessment in the region. The meeting was a result of the EC-funded initiative DELASS (Developing Elasmobranch Assessments), an international research project aimed at improving the scientific basis for the management of fisheries taking elasmobranchs in Europe. Items reviewed and discussed at the meeting included information on the biology of Atlantic pelagic sharks, with emphasis on the blue shark, existing analyses and further work on blue shark stock status, cooperation between ICES and ICCAT on future assessment work of pelagic sharks, data availability, a possible assessment of blue shark by ICES in 2002, and future research directions and collaborative work.

After the meeting, a spreadsheet for calculating population parameters of blue sharks under uncertainty using a life-table approach was made available by NMFS scientists for use in the ensuing ICES Study Group on Elasmobranch Fishes stock assessment meeting held in Copenhagen, Denmark, in May 24-25, 2002. ICCAT is planning an assessment of pelagic sharks in 2004.

2.2.7 Billfish Research

Sampling of recreational billfish tournaments continued in 2001 along the U.S. east coast, Gulf of Mexico, Bahamas, and U.S. territories in the Caribbean. A total of 177 billfish tournaments were sampled in 2001, compared to 174 tournaments in 2000. This represented 127,467 hours of fishing effort, a decrease of about 19,188 hours from the 2000 level. In 2001, sampling accounted for 108 billfish boated (75 blue marlin, 22 white marlin, 11 sailfish, and 0 spearfish) and 5,563 released. In comparison, in 2000, there were 144 billfish boated (120 blue marlin, 8 white marlin, 16 sailfish, and 0 spearfish) and 4,598 released.

A number of working papers on various aspects of marlin research were submitted to ICCAT for consideration at the intercessional white marlin assessment in May 2002. These are briefly summarized as follows:. SCRS/02/065 presents standardized catch rates for white and blue marlin from the US pelagic longline fishery in the northwest Atlantic and the Gulf of Mexico while document SCRS/02/066 summarizes standardized catch rates for white and blue marlin from the US recreational tournament fishery in the northwest Atlantic and the Gulf of Mexico. Bayesian methods for accounting for data contradictions in stock assessment of Atlantic white marlin are summarized in SCRS/02/067. A preliminary assessment of Atlantic white marlin using a state-space implementation of an age structured production model is presented in SCRS/02/68. Document SCRS/02/069 reviews the indices of abundance for white marlin from the Playa Grande Yachting Club sport fishery in Venezuela. SCRS/02/071 presents habitat preferences of Istiophorid billfishes in the western North Atlantic and discusses the application of popup satellite archival data to habitat-based stock assessments methodologies. The size composition of white marlin catch is analyzed in SCRS/02/072. The research needs involved in habitat standardization of CPUE indices are reviewed in SCRS/02/073 and revised estimates the U.S. recreational harvest of white marlin is presented in SCRS/02/074. SCRS /02/075 presents a discussion of developing biological reference points alternatives to standard assessment methods and SCRS/02/076 summarizes standardized catch rates for blue and white marlin from the Venezuelan pelagic longline fishery off the Caribbean Sea and Western Central Atlantic. Document SCRS/02/125 presents results of simulation experiments which indicates the unsuitability of using mean hook depth for computing effective effort for standardizing billfish longline CPUE.

The NMFS SEFSC again played a substantial role in the ICCAT Enhanced Research Program for Billfish in 2002, with SEFSC scientists acting as general coordinator and coordinator for the western Atlantic Ocean. Major accomplishments in 2002 are documented in SCRS/02/127.

In 2002, further investigations of biological habitat requirements and post release survival of blue and white marlins were conducted using popup satellite archival tags (PSAT) facilitated through cooperative research with the US pelagic longline vessels and with the US for-hire fleets operating in areas of high concentrations of billfish. To date, 19 blue marlin have be released with PSATs from recreational vessels in the Caribbean and 6 from commercial platforms in the South Atlantic off Florida. In addition, 5 white marlin were tagged with PSATs from recreational vessels near the southeastern tip of the Dominican Republic and along the US Mid-Atlantic coast. In addition, 6 white marlin were tagged with PSAT tags from commercial longline platforms off South Florida. This research is critical for evaluation of essential fish habitat since for pelagic species in general, and for marlins in particular the information base is almost non-existent. Data from these fish are currently being compiled and analyzed.

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 7,785 billfishes (including swordfish) and 490 tunas in 2001. This represents a decrease of about 15% for billfish and a decrease of 42% for tunas from 2000 levels. A number of electronic tagging studies involving bluefin tuna and billfish were also carried out in 2000 and 2001. These are discussed in the bluefin and billfish research sections above.

There were 77 billfish recaptures from the CTC and TBF reported in 2001, representing a decrease of 49% from 2000. Among the 2001 CTC billfish recaptures there were 15 blue marlin, 3 white marlin, 51 sailfish, and 8 swordfish. For the CTC and TBF, a total of 53 tunas were recorded recaptured in 2001; these were 48 bluefin and 5 yellowfin tuna. These recaptures represent a 43% increase with respect to year 2000 values. The ICCAT Enhanced Research Program for Billfish 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 long line fleet was continued into 2001 (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, 5% sampling of the number of sets reported by the longline fleet. A total of 4,886 sets (3,432,941 hooks) were recorded observed by personnel from the SEFSC and NEFSC programs from May of 1992 to December of 2001. Observers recorded over 290,013 fish (primarily swordfish, tunas, and sharks), marine mammals, turtles, and seabirds during this time period. Observer coverage successfully recorded effort from 329 observed sets during 1992, 817 during 1993, 648 during 1994, 699 during 1995, 361 during 1996, 455 during 1997, 287 during 1998, 430 during 1999, 465 during 2000, and 395 during 2001 corresponding to nominal sampling fractions of about 2.5%, 6%, 5.2%, 5.2%, 2.5%, 3.1%, 2.9% , 4% , 4%, and 4%. Increased sampling in year 2002 is expected to increase the sampling fraction to about 8%. Document SCRS/02/126 provides a more detailed summary of the data resulting from observer sampling between 1992 and 2000.

In 2001, an experimental program was initiated in cooperation with the U.S. pelagic long line fleet with a history of fishing for swordfish on the Grand Banks fishing grounds, to develop gear modifications that might prove useful in reducing the rate of interaction and limit severity of injury to marine turtles incidentally captured by the gear while at the same time minimizing loss of targeted catch. The gear modifications being tested include the type of bait used, the type of hooks used, as well as the positioning of gangions relative to surface floats. Other gear modifications may be tested in the future. It is viewed that these technologies could be of application in other long line fleets. In this experiment, there is 100% observer coverage of the U.S. vessels is underway. The experiments undertaken are being coordinated and are, to some degree, based on provisional results obtained from experiments conducted on Azorean long line vessels operating in the northeastern Atlantic as described in SCRS/01/110. Provisional results of the experiment conducted in year 2001 and a description of the experiment underway in 2002 are provided in SCRS/02/123. Document SCRS/02/124 describes an experimental approach to estimate post-hooking survival of marine turtles captured in longline gear. This research was initiated in 2001 and will continue in 2002.

Southeast U.S. Shark Drift Gillnet Fishery Observer Coverage. The SEFSC Pelagic Observer Program at the Panama City Laboratory observed 215 sets of the shark drift gillnet fishery during 1999-2001. Effort took place in waters off of south Georgia, as well as central and south Florida.

Foreign Fishery Observers. There was no foreign fishing activity in the U.S. Exclusive Economic Zone (EEZ) off the east coast during 2001.

3. U.S. IMPLEMENTATION OF ICCAT CONSERVATION AND MANAGEMENT MEASURES

3.1 Catch Limits and Minimum Sizes

3.1.1 Rebuilding Program for West Atlantic Bluefin Tuna (Rec 98-7)

The twenty year rebuilding program for west Atlantic bluefin tuna established an annual landings quota for the United States of 1387 mt. This quota is applied to the 2000 fishing year of June 1, 2000 - May 31, 2001. During the 1999 fishing year, there was an underharvest of 228 mt, which has been carried over to adjust the 2000 fishing year quota. The United States landed an estimated 1181 mt, including 18.8 mt of bluefin tuna less than 115 cm and 30 mt of dead discards, in fishing year 2000 (see Appendix, page 1)[1].

3.1.2 Recommendation Regarding Atlantic Billfishes (Rec 98-10)

This extends the requirements of Rec 97-9 to apply in the year 2000 (i.e., a 25% reduction in landings from the 1996 baseline of 26 mt of blue marlin and 2.5 mt of white marlin). The billfish fishery is managed on a fishing year basis (June 1 - May 31) in the United States. During the 2000 fishing year, the United States landed an estimated 0.23 mt of white marlin and 21.4 mt of blue marlin (see Appendix, page 3).

[1] Fishing year 2001 was year 3 in the initial 4-year balancing period for applying the 8% limit on bluefin tuna less than 115 cm. The United States will report on the balance for the complete 4 year period at the conclusion of the 2002 fishing year.

3.1.3 Recommendation to Establish a Plan to Rebuild Blue Marlin and White Marlin Populations (Rec 00-13)

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 1999 levels; 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, for 2001 and 2002. Catch and release rates 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. The United States has also implemented time/area closures to reduce billfish mortality (see section 3.2.2).

3.1.4 Recommendation to Establish a Rebuilding Program for North Atlantic Swordfish (Rec 99-7)

This recommendation establishes an annual landings quota of 2951 mt ww for the United States. The discard allowance for 2000 is 320 mt ww. The landings quota and discard allowance are applied to a fishing year of June 1 - May 31. During the 1999 fishing year, there was an underharvest of 731 mt ww. This underharvest has been added to the landings quota for the 2001 fishing year, therefore, the 2000 landings quota has not been adjusted. Landings and discard estimates for the 2000 fishing year are provided in the U.S. compliance tables (See Appendix, page 4). 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 (see Appendix, page 4). The United States has also implemented time/area closures to reduce dead discards of juvenile swordfish (See section 3.2.2).

3.1.5 Recommendation Concerning Swordfish Catches by the Tuna Longline Fishery (Rec 00-3)

The United States is in the final stages of rulemaking to establish a 400 mt reserve from the 2001 fishing year quota for North Atlantic swordfish; this will be applied to Japan's discards during 2001 in order to account for that mortality in the total allowable catch.

3.1.6 Recommendation on South Atlantic Swordfish (Rec 01-2)

The United States informed ICCAT of its intention to stay within its prior annual catch limit of 384 mt ww (289 mt dw) for 2002. The United States landed an estimated 93.8 mt in fishing year 2000.

3.1.7 Recommendation on Revision and Sharing of the Southern Albacore Catch Limit (Rec 01-6)

The United States is subject to a catch limit of 100 mt in 2002, but does not have a directed fishery for southern albacore. The United States estimated landings for the 2000 fishing year is less than 5 mt.

3.1.8 Recommendation on North Atlantic Albacore Catch Limits (Rec 01-5)

The United States was allocated a landings quota of 607 mt ww for the 2002 fishing year, which is a level consistent with average landings for the United States over the past ten years. This recommendation applies for one year only. 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, no new regulations have been proposed for this fishery in the United

States. 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 2003 and/or 2004. Once ICCAT establishes a catch limit for 2003 and beyond (as expected at the November 2002 meeting), the United States may need to undertake rulemaking to adjust as necessary for any overharvest or underharvest during 2002. The United States landed an estimated 415 mt in fishing year 2000.

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

3.1.9 Recommendation on Bigeye Tuna Conservation Measures (Rec 01-1)

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 an estimated 589.2 mt, with no landings of bigeye tuna less than 3.2 kg in fishing year 2000.

3.1.10 Resolution on Atlantic Sharks (Res 01-11)

This 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. The United States already submits catch and effort data for sharks and has catch limits in place for Atlantic porbeagle, shortfin mako, and blue sharks. In 2002, pursuant to the 2000 Shark Finning Prohibition Act, the United States banned the practice of finning nationwide (67 FR 6194, February 11, 2002), 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.

3.2 Closed Seasons

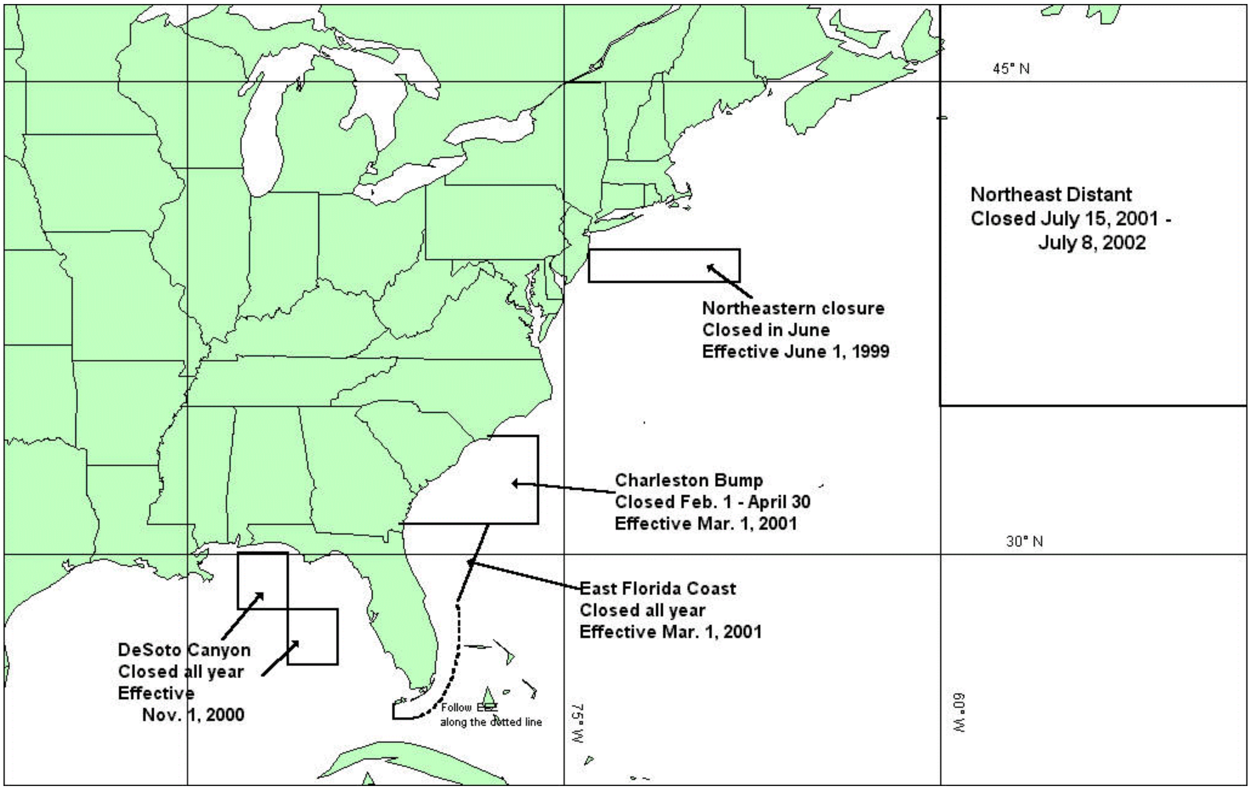
3.2.1 Recommendation on the Establishment of a Closed Area/Season for the Use of Fish-Aggregation Devices (Rec 99-3)

No U.S. action is necessary. The United States does not have any surface fleets fishing in the area covered by this recommendation.

3.2.2 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 of regulated and protected species 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 within and beyond the US EEZ (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 (50 CFR 635.21(c)(2)).

NMFS is conducting a 3-year experimental fishery in the NED closed area to develop sea turtle bycatch reduction measures. The overall objective is to research gear modifications that minimize bycatch rates or bycatch mortality and share these results with countries who have pelagic longline fleets. The second year of the experiment is underway.



Note: The Northeast Distant Area is closed all year effective July 9, 2002.

3.3 Ban on Imports

3.3.1 Trade Restrictive Recommendations adopted in 2000 and 2001

In 2000, ICCAT recommended bigeye tuna trade restrictions against Belize, Cambodia, Honduras, Equatorial Guinea, and St. Vincent and the Grenadines pursuant to its 1998 unregulated and unreported catches resolution. At its 2001 meeting, ICCAT allowed the bigeye tuna import prohibition against Honduras to enter into force effective Jan. 1, 2002. However, ICCAT recommended lifting the bluefin tuna and swordfish import trade restriction against Honduras. A 2001 ICCAT recommendation indicates that an import prohibition against St. Vincent and the Grenadines should take effect on Jan. 1, 2003, unless ICCAT decides at its 2002 meeting that this measure would be unnecessary based on documentary evidence. The United States is developing regulations to implement these measures.

3.3.2 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 2001, ICCAT recommended that all bigeye tuna and 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. The United States already has a domestic documentation program for swordfish called the Certificate of Eligibility. Either the domestic COE form or the ICCAT Swordfish Statistical Document meet the domestic reporting requirements. The United States is developing regulations to implement these measures.

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 at: http://www.st.nmfs.gov/st1/nop/. Information is also available at that website on 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

3.5.1 Recommendation Concerning a Vessel Monitoring System Pilot Program (Rec 97-12)

The United States adopted fleet-wide VMS requirements in the Atlantic pelagic longline fishery in May 1999, but was subsequently sued by an industry group. By order dated September 25, 2000, the U.S. District Court for the District of Columbia prevented any immediate implementation of VMS in the Atlantic pelagic longline fishery, and instructed the National Marine Fisheries Service (NMFS) to "undertake further consideration of the scope of the [VMS] requirements in light of any attendant relevant conservation benefits." Pursuant to that order, NMFS conducted an analysis of HMS pelagic longline vessels to determine whether the VMS requirement could be restricted to a subset of HMS pelagic longline vessels. This information has been submitted to the court, and NMFS is awaiting further direction regarding its ability to implement a VMS program.

3.6 Inspection Schemes and Activities

See Section 3.7 for information on the Management Standard for the Large-Scale Tuna Longline Fishery.

3.7 Measures to Prohibit IUU Fishing

The United States is committed to full participation in ICCAT's efforts to prohibit Illegal, Unregulated and Unreported (IUU) fishing in the Convention Area. The United States government is actively developing a national plan of action (NPOA) to combat IUU, consistent with the International Plan of Action that was recently adopted by the FAO. Possible regulatory or legislative actions will be considered in the context of NPOA development.

3.7.1 Management Standard for the Large-Scale Tuna Longline Fishery (Res 01-20)

In 2001, ICCAT resolved that minimum management standards should be established for issuance of fishing licenses to tuna longline vessels greater than 24 meters in overall length and that an annual report should be submitted to ICCAT using a specific format. As part of the United States limited access program, all vessels that participate in tuna fisheries are currently licensed, of which 17 are tuna longline vessels over 24 meters in overall length. The United States' submission is provided in the Appendix on page 6.

3.8 Other Recommendations

3.8.1 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. NMFS has also published a proposed rule to further improve the monitoring of recreationally landed billfish and swordfish [66 FR 66386] and is developing final regulations at this time.

3.8.2 Recommendation Concerning Registration and Exchange of Information on Vessels Fishing for Tunas and Tuna-Like Species in the Convention Area (Rec 00-17).

The United States has submitted the list of vessels required pursuant to this recommendation to the Secretariat.

3.8.3 U.S. Swordfish Certificate of Eligibility Program

A summary of data collected through this program in 2002 is provided in the Appendix, page 9.

3.8.4 U.S. Enforcement Actions

A summary of actions taken in ICCAT fisheries is provided in the Appendix, page 7.

Recent U.S. management actions for Atlantic highly migratory species can be found online at: http://www.nmfs.noaa.gov/sfa/hmspg.html.

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.

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Appendix: Compliance Tables - BFT

ICCAT

Reporting form for catch limit / quota and minimum size regulations

Party	USA
Date	

Species	Bluefin	**Stock**	East

CATCH (MT)

year	limit/quota	Rec. No.	adjusted quota	catch	balance	mngent period
1993						
1994						
1995	0	94-11				
1996	0	94-11				
1997	0	94-11				
1998	0	94-11				
1999	0	98-5				
2000	0	98-5				
2001	0	00-9				
2002						
2003						

SIZE2001

Minimum size limit	Tolerance level	Rec. No.	% of undersize fish in catch	Size data submitted
6.4 kg	15%	74-1		

observations*

Species	Bluefin	**Stock**	West

CATCH (MT)

year	quota	discard limit	Rec. No.	adjusted quota	landings	discards	balance	management period
1995			94-12					
1996			94-12					
1997	1344.4		96-4		1334.3	161	10.1	
1998	1344.4		96-4	1354.5	1308	104	47	Calendar year
1999	1387	67.7	98-7	1434	1226	51	217	Fishing year
2000	1387	67.7	98-7	1604	1185	30	438	Fishing year
2001	1387	67.7	98-7	1825				
2002	1387		98-7					
2003			98-7					

SIZE2001 Fishing Year 2000

Minimum size limit	Tolerance level	Rec. No.	% of undersize fish in catch	Size data submitted
6.4kg	15%	74-1	N/A	
30 kg/115 cm	8%	91-1	1.6% (18.8 mt)	

observations*

Reporting by fishing year (June - May).
Landings for CY98 include bridge period from CY to FY landings of 71 mt
Discards for FY99 and landings for FY00 are updated and are final estimates
Balances for FY99 and FY00 include one-half of the discard balance for those years

* Please state whether calendar or fishing year, and specify fishing year where appropriate
Please specify cases where autonomous quota has been set following objection to the relevant recommendation
Please state whether overage/underage are being applied on an annual, biennial or other basis
(Note, overages / underages may only be applied in accordance with the recommendations in force)

ICCAT

Reporting form for catch limit / quota and minimum size regulations

Party	USA
Date	

Species	Albacore	**Stock**	North

CATCH (MT)

year	limit/quota	Rec. No.	catch	balance	management period	% BET catch
1993			508			
1994			741			
1995			545			
93-95 av.			598			
1999		98-8	314			
2000		98-8	415		Fishing year	
2001	607	00-6				
2002	607	01-5				
2003						

observations*
Fishery is managed on a fishing year (June to May)

Species	Albacore	**Stock**	South

CATCH (MT)

year	limit/quota	Rec. No.	catch	balance	management period	% BET or SWO
1992						
1993						
1994						
1995						
1996			1			
92-96 av.			0.2			
1998	0.2	97-5	1			
1999	0.2	98-9	1.4			
2000	6	99-6	<5		Fishing year	4% swo
2001	100	00-7				
2002	100	01-6				
2003						

observations*
Fishery is managed on a fishing year (June to May).
The 2000 Southern Albacore fishing year catch number may be revised upon review of incomplete landings reports.

* Please state whether calendar or fishing year, and specify fishing year where appropriate
Please specify cases where autonomous quota has been set following objection to the relevant recommendation

ICCAT

Reporting form for catch limit / quota and minimum size regulations

Party	USA
Date	

Species White marlin

CATCH (MT)

year	catch limit	Rec. No.	PS/LL	Total catch	underage/ overage	
1996				7		
1997				2		
1998				2		
1999	2.5	97-9		1.6	0.9	
2000	2.5	98-10		0.23	2.27	Fishing year
2001		00-13				
2002		01-10				

observations

Catches and catch limits as reported and approved by Compliance Committee

Fishery is managed on a fishing year (June to May)

Species Blue marlin

CATCH (MT)

year	catch limit	Rec. No.	PS/LL	Total catch	underage/ overage	
1996				43		
1997				46		
1998				50		
1999	26	97-9		37	-11	
2000	26	98-10		21.4	4.6	Fishing year
2001		00-13				
2002		01-10				

observations

Catches and catch limits as reported and approved by Compliance Committee

Fishery is managed on a fishing year (June to May)

Appendix: Compliance Tables - SWO

ICCAT

Reporting form for catch limit / quota and minimum size regulations

Party	USA
Date	

Species Swordfish **Stock** North

CATCH (MT)

year	limit/quota	Discard limit	Rec. No.	adjusted quota	landings	discards	balance	mngmnt period
1993					3782			
1994								
1995	3970		94-14		4026			
1996	3500		94-14		3559#			
1997	3277		95-11 /96-7 /98-13		2831		446	
1998	3190		96-7/ 97-6/ 98-13	3636	3112		524	
1999	3103		96-7/ 97-6 /98-13	3627	2896		731	
2000	2951	320	99-2/ 01-13	2951	2683.7	428.3	267.3	Fishing year
2001	2951	240	99-2/ 01-13	3841				
2002	2951	160	99-2/ 01-13					
2003								

SIZE200· Fishing Year 2000

Minimum size limit	Tolerance level	Rec. No.	% of undersize fish in catch	Size data submitted
25 kg/125 cm	15%	90-2		
119 cm	0%	95-10	5.6 mt (fishing year 2001)	

observations*
Fishery is managed by fishing year (June-May)
#4148 in 1997 SCRS includes discards. Landings = 3559
FY1999 balance of 731 carried over to FY01
Adjusted quota for FY2001 = limit (2951) plus balance of adjusted FY00 quota and landings
(2951-2683.7=267.3), balance of dead discards (320 limit - 428.3=-108.3), and 731 mt carryover

Species Swordfish **Stock** South

CATCH (MT)

year	limit/quota	Rec. No.	adjusted quota	catch	balance	management period
1993						
1994						
1995	250	94-14				
1996	250	94-14		384		Fishing year
1997	250	96-8		396		Fishing year
1998	384	97-7,97-8	384	295	N/A	Fishing year
1999	384	97-7, 97-8	384	51	N/A	Fishing year
2000	384	97-7, 97.8	384	93.8	N/A	Fishing year
2001	*384*	00-4				
2002	*384*	01-2				
2003						

SIZE2001 Fishing Year 2000

Minimum size limit	Tolerance level	Rec. No.	% of undersize fish in catch	Size data submitted
25 kg/125 c	15%	90-2		
119 cm	0%	95-10		

observations*
384 MT limit agreed at intersession meeting of Panel 4 in 1997
Fishery is managed by fishing year (June-May)
Limits for 2001 & 2002 are autonomous in accordance with Recs 00-4, 0

* Please state whether calendar or fishing year, and specify fishing year where appropriate
Please specify cases where autonomous quota has been set following objection to the relevant recommendation
Please state whether overage/underage are being applied on an annual, biennial or other basis
(Note, overages / underages may only be applied in accordance with the recommendations in force)

ICCAT

Reporting form for catch limit / quota and minimum size regulations

Party	USA
Date	

Species	Bigeye	**Stock**	All Atlantic

CATCH (MT)

year	limit/quota	Rec. No.	adjusted quota	catch	balance	management period
1991				974		
1992				813		
91-92 av.				893.5		
1999				1262		
2000				589.2		fishing year
2001	NL	00-1				
2002	NL	01-1				

SIZE2001 Fishing Year 2000

Minimum size limit	Tolerance level	Rec. No.	% of undersize fish in catch	Size data submitted
3.2 kg	15%	79-1	0	

observations*

NL = no limit as catch in 1999 was less than 2,100 Mt

Fishery is managed on a fishing year (June to May).

Species	Yellowfin	**Stock**	All Atlantic

CATCH (MT)

year	limit/quota	Rec. No.	adjusted quota	catch	balance	management period
1991						
1992						
91-92 av.						
1999						
2000				7207.1		Fishing year
2001	NL	00-1				
2002	NL	01-1				

SIZE2001 Fishing Year 2000

Minimum size limit	Tolerance level	Rec. No.	% of undersize fish in catch	Size data submitted
3.2 kg	15%	72-1	0	

observations*

Fishery is managed on a fishing year (June to May).

* Please state whether calendar or fishing year, and specify fishing year where appropriate
Please specify cases where autonomous quota has been set following objection to the relevant recommendation
Please state whether overage/underage are being applied on an annual, biennial or other basis
(Note, overages / underages may only be applied in accordance with the recommendations in force)

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	No	Yes	Yes
Note	See section 2.2.9	Implementation on hold pending court ruling	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	Transhipment 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 Certificate of Eligibility	

[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.

NOAA ENFORCEMENT ACTIONS TAKEN ON ICCAT SPECIES IN THE UNITED STATES

September 1, 2001 - August 31, 2002

During the reporting period, enforcement efforts consisted of dockside monitoring of offloads at major landing facilities in conjunction with dealer record checks, as well as at-sea boardings. Enforcement officials detected the following violations within the U.S. Fleet:

Prohibition	Number of Cases	Disposition/Status
Possession of Atlantic Tuna in improper form	2	Open investigation
Unreported Bluefin Tuna (BFT) landing	7	Open investigation
	1	Final case report in OLE
Sale of recreationally caught BFT	1	Open investigation
Possess undersized BFT	1	Open Investigation
Exceed BFT catch limit	1	Closed
Possess BFT with illegal gear	1	Open investigation
Illegal sale of Billfish	2	Open investigation
	1	Open investigation
	1	Closed
Undersized Billfish	2	Open investigation
Fail to maintain Billfish in specified form	1	Case closed
Illegal use of live bait in GoM	1	Open investigation
	1	Sent to GCEL
	1	NOVA issued
Illegally possess HMS w/o vessel permit	12	Open investigations
	2	Written warnings
	1	Summary Settlement
	1	Closed

Prohibition	Number of Cases	Disposition/Status
Selling Atlantic HMS w/o dealer permit	1	Open investigation
Possess undersized HMS	1	Open investigation
	4	Summary Settlement
HMS not in specified form	1	Written warning
Did not take an observer when required	1	Sent to GCEL
	2	Written warning
Failure to move after interaction with Marine mammal or sea turtle	1	Case closed
Improperly unhook sea turtle	1	Case closed
Failure to have permit at vessel or dealer or	1	Open investigation
permit was altered	1	Written warning
Falsify or fail to record required information	2	Open investigation
Violate any provision of M-SA or ATCA	4	Open investigation
Fishing with PLL w/o dipnet or line clipper	1	Open investigation

Swordfish Imports into the United States (metric tons, dressed weight)
Data Summarized from Certificates of Eligibility from January-December 2001

Flag of Harvesting Vessel	Atlantic Ocean	Pacific Ocean	Indian Ocean	Not Provided	TOTAL
Australia	0	207	196	46	449
Barbados	5	0	0	0	5
Bolivia	20	0	0	0	20
Brazil	834	0	0	2	836
Canada	448	0	0	0	448
Chile	0	799	0	0	799
Costa Rica	0	407	0	0	407
Ecuador	0	326	0	0	326
El Salvador	0	45	0	0	45
Fiji Islands	0	25	0	0	25
Grenada	16	0	0	1	17
Indonesia	0	0	24	0	24
Japan	0	72	0	7	79
Mexico	0	285	0	0	285
Namibia	91	0	0	0	91
Netherland	3	1	0	1	5
New Zealand	0	236	0	12	249
Nicaragua	0	1	0	0	1
Panama	0	93	0	0	93
Philippines	0	32	0	43	75
Samoa	0	1	0	0	1
South Africa	214	0	0	11	225
Taiwan	172	26	2,633	0	2,831
Tonga	0	3	0	0	3
Trinidad & Tobago	16	0	0	0	16
USA	1	0	0	0	1
Uruguay	184	0	0	0	184
Venezuela	9	1	0	16	26
Vietnam	0	51	0	0	51
TOTAL	**2,013**	**2,612**	**2,853**	**140**	**7,617**

Appendix Table 2.1-YFT. Annual Landings (MT) of Yellowfin Tuna from 1997 to 2001.

Area	Gear	1997	1998	1999	2000	2001
NW Atlantic	Longline	838.9	464.9	581.3	734.5	631.8
	Rod and reel*	3560.9	2845.7	3818.2	3809.5	3690.5
	Troll	218.0	177.5	0.0	0.0	0.0
	Gillnet	1.3	1.7	0.2	0.2	7.6
	Trawl	1.9	0.7	4.1	1.8	2.7
	Handline	34.3	0.0	192.0	235.7	242.5
	Trap	**	0.1	0.8	0.5	0.1
	Uncl	0.0	0.0	2.1	1.3	6.8
Gulf of Mexico	Longline	2571.3	1864.5	2736.6	2133.0	1505.5
	Rod and reel*	7.7	80.9	149.4	52.3	494.2
	Handline	55.6	60.8	12.7	28.6	43.4
	Gillnet	0.0	0.0	**	0.0	0.0
Caribbean	Longline	135.4	58.6	24.4	11.8	23.1
	Troll	19.6	0.0	0.0	0.0	0.0
	Handline	0.7	3.9	14.5	19.4	14.3
	Gillnet	**	0.0	0.0	0.1	0.3
	Trap	0.1	0.0	0.1	0.3	0.3
NC Area 94a	Longline	6.1	4.6	0.2	2.1	3.5
SW Atlantic	Longline	221.9	55.3	32.4	19.8	36.2
All Gears & Areas		7673.7	5619.2	7569.0	7050.7	6703.1

** $\leq$ 0.05 MT

* Rod and Reel catches and landings represent estimates of landings and dead discards based on statistical surveys of

Appendix Table 2.1-SKJ. Landings (MT) of Skipjack Tuna from 1997 to 2001

Area	Gear	1997	1998	1999	2000	2001
NW Atlantic	Longline	1.0	0.7	0.3	0.0	0.1
	Rod and reel*	42.0	49.5	63.6	13.1	32.9
	Troll	0.6	0.4	0.0	0.0	0.0
	Gillnet	8.9	16.9	26.5	1.9	3.6
	Trawl	0.0	0.2	1.0	0.0	0.2
	Handline	0.1	0.0	0.2	0.2	0.2
	Trap	0.0	0.0	17.5	0.0	0.0
Gulf of Mexico	Longline	1.3	0.6	0.4	0.2	0.2
	Rod and reel*	21.7	37.0	34.8	16.7	16.1
	Handline	0.0	0.0	0.4	0.7	0.0
	Uncl	0.0	0.0	0.0	0.0	0.0
Caribbean	Longline	1.2	0.0	1.3	1.6	4.0
	Gillnet	0.2	0.0	0.4	0.6	1.6
	Handline	0.0	0.0	5.8	8.8	10.3
	Trap	**	0.0	0.1	0.3	0.4
	Trol	7.3	0.0	0.0	0.0	0.0
SW Atlantic	Longline	**	0.0	0.0	0.0	0.0
All Gears & Areas		84.3	105.3	152.3	44.1	69.5

** $\leq$ 0.05 MT
* Rod and Reel catches and landings represent estimates of landings and dead discards based on statistical

Appendix Table 2.1-BET. Landings (MT) of Bigeye tuna by year for 1997-2001.

Area	Gear	1997	1998	1999	2000	2001
NW Atlantic	Longline	476.3	544.3	737.8	333.2	506.1
	Rod and reel*	333.5	228.0	316.1	34.4	366.2
	Troll	3.9	4.0	0.0	0.0	0.0
	Gillnet	**	0.4	0.2	0.0	0.2
	Handline	2.7	0.0	11.9	4.1	33.2
	Trawl	1.0	0.5	1.2	1.7	0.4
	Pound	0.0	0.0	0.0	0.0	0.0
	Uncl	0.5	0.0	0.9	0.0	1.8
Gulf of Mexico	Longline	33.9	25.6	54.6	44.5	15.3
	Rod and reel*	0.0	0.0	1.8	0.0	0.0
	Handline	**	0.1	0.2	0.1	0.5
Caribbean	Longline	50.0	48.5	23.2	13.7	31.9
	Handline	0.0	0.0	0.2	1.5	0.0
NC Area 94a	Longline	91.8	48.4	35.3	63.1	61.0
SW Atlantic	Longline	142.8	28.5	78.2	77.4	68.2
All Gears & Areas		1136.4	928.3	1261.6	573.6	1084.7

** <= 0.05
* Rod and Reel catches and landings represent estimates of landings and dead discards based on statistical

Appendix Table 2.2a-BFT.

Estimates of BFT Longline Discard Estimates using several different methods						
Methodology	**Mean Annual Metric Tonnes for the Period Indicated**					
	1992-1997[1]	*1993-1997*[1]	*1994-1997*[1]	*1999*[1]	2000[1]	2001[1]
logbook tallies	67	72	82	30	67	25
no pooling	171	177	198	83	132	98
5 observations for pooling	197	206	233	134	143	113
30 observations for pooling	145	131	139	151	173	86

Notes: *logbook tallies* represents the methodology previously applied and assumes that logbook reports are an accurate indication of the levels of dead discarded BFT; *no pooling* makes use of the direct observations of dead discard rates, but assumes for strata for which no observations are available, that 0 dead discards occurred even though logbooks might indicate otherwise; *5 observations for pooling* makes use of the direct observations of dead discard rates and pools across years until at least 5 observations per area-quarter stratum is achieved for computing observed dead discard rates; *30 observations for pooling* makes use of the direct observations of dead discard rates and pools across years and for some cases, quarters, until at least 30 observations per area-quarter stratum is achieved. [1]
Calender year statistics

Appendix Table BYP 1. Genetic samples from the Mediterranean Sea, east Atlantic and west Atlantic (1) deposited in sample archive in Charleston, SC or (2) held at U. South Carolina (pers. comm. Bert Ely). Information is through mid September, 2001.

Mediterranean Sea

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Total
< 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 Atlantic

< 39 cm							1				1
39-64 cm							9				9
65-88 cm							1				1
88-111 cm							1				1
> 111 cm	1						163				164
unknow n											
Total-east	1						175				176

West Atlantic

39-64 cm	2				15	85	1				103
65-88 cm	6			1	76	44	54	22			203
88-111 cm			1	1	307	127	94	62			592
> 111 cm	15	150	49	159	104	290	89	128	16	8	985
unknown	1	3	25	86	58	11	1				185
Total-west	24	153	75	247	560	557	239	212	16		2068

Appendix TableBYP- 2. Otolith samples from the west Atlantic deposited in the Charleston laboratory by size range.

	1996	1997	1998	1999	2000	2001	Total
< 39							0
39-64	0	10	35	1	0		46
65-88	1	70	34	53	22		180
89-111	0	285	124	92	60		561
112+	85	11	95	29	23		243
unknown	2	23	7	1	0		33
Total	88	399	295	176	105		1063

Appendix Table BYP-3. Muscle samples useful reproductive research (frozen) deposited at the Charleston laboratory by region, year and 20 cm interval (0-19cm, ...).

East Atlantic

	1996	1997	1998	1999	2000	2001	2002
20				1			
40							
60							
80							
100				1			
120				1			
140				3			
160				20			
180				73			
200				39			
220				21			
240				2			
260				2			
280				2			
300							
total-east				2164			

West Atlantic

west							
	1996	1997	1998	1999	2000	2001	2002
20							
40		8	4				
60		3	21	1	9		
80	1	19	1	1	47		
100		18	1	2	25		
120		1		4	11		
140	1				66	2	
160	12			1	6	4	
180	49	6	16	6	5		
200	12	9	8	24	8	2	1
220	22	8	5	10	10	2	1
240	6	3	1	9	3	6	5
260	3	3	4	1			
280			4				1
300			2				
total-west	106	78	67	59	190	16	8

Appendix Table BYP-4. Muscle samples useful for reproductive research deposited at the Charleston laboratory tabulated by region, month and 20 cm interval (0-19cm, ...) through 2002.

East Atlantic

	1	2	3	4	5	6	7	8	9	10	11	12
20												
40												
60												
80												
100										1		
120										1		
140										3		
160										20		
180										73		
200										39		
220										21		
240										2		
260										2		
280										2		
300												
total-east										164		

West Atlantic

		1	2	3	4	5	6	7	8	9	10	11	12
	20												
	40									8	8		
	60						2	7		8	34		
	80						5	51	9	4			
	100							23	7	13	6		
	120	4	1					7		2	6		
	140	20	47					2		2	2		
	160	6	8						4	10	8		
	180	19						2	11	54	30	16	
	200	14			5				8	30	22	18	6
	220	8			6	2			3	24	38	16	4
	240	1	2	1	13	6		1	5	18	8		
	260								4	12		2	
	280	1							1	6			
	300									4			
	total-west	73	58	1	24	8	7	93	52	195	162	52	10

Appendix Table 2.2b-BFT. Landings (MT) of Bluefin tuna for 1997 to 2001.

Area	Gear	1997	1998	1999	2000	2001
NW Atlantic	Longline	26.0	30.5	25.1	22.8	17.7
	Handline	17.4	29.2	15.5	3.2	9.0
	Purse Seine	249.7	248.6	247.9	275.2	195.9
	Harp	97.5	133.1	115.8	184.2	101.9
	* Rod and reel (>145 cm LJFL)	752.6	610.4	657.5	632.8	993.4
	* Rod and reel (<145 cm LJFL)	178.9	166.3	103.0	49.5	249.3
	Uncl	2.2	0.6	0.1	0.2	0.5
Gulf of Mexico	Longline	23.8	18.3	48.4	43.3	19.8
	* Rod and reel	0.0	0.0	0.4	0.9	1.7
	All Gears	1348.1	1237.0	1213.7	1212.1	1589.2

* Rod and Reel catches and landings represent estimates of landings and dead discards when available based harvesting sector.

Appendix Table 2.2-ALB. Landings (MT) of Albacore tuna for 1997 to 2001.

Area	Gear	1997	1998	1999	2000	2001
NW Atlantic	Longline	140.0	155.4	179.5	130.5	171.7
	Gillnet	42.8	40.1	27.0	0.8	3.3
	Handline	4.8	0.0	0.6	2.9	1.7
	Trawl	2.6	2.4	0.4	0.0	0.0
	Troll	1.6	5.8	0.0	0.0	0.0
	Rod and reel*	220.2	601.1	90.1	250.8	122.3
	Pound	1.3	0.9	0.4	0.0	0.0
	Uncl	0.2	0.0	0.0	0.1	0.1
Gulf of Mexico	Longline	16.9	3.9	3.8	4.1	4.9
	Rod and reel*	49.3	0.0	0.0	0.0	0.0
	Handline	0.0	0.0	**	0.0	0.0
Caribbean	Longline	16.1	17.8	8.3	9.2	8.7
	Trol	3.6	0.0	0.0	0.0	0.0
	Gillnet	**	0.0	0.2	0.1	0.5
	Trap	**	0.0	**	0.2	0.3
	Handline	0.0	0.0	3.8	5.0	2.2
NC Area 94a	Longline	11.4	1.6	1.5	2.6	6.1
SW Atlantic	Longline	4.7	1.4	1.4	0.9	2.4
	All Gears & Areas	515.5	830.4	317	407.35	324.2

** <= 0.05 MT * Rod and Reel landings are estimates of landings and dead discards, when available.

Appendix Table 2.3-SWO. Catches and Landings (MT) of Swordfish for 1997 to 2001.

Area	Gear	1997	1998	1999	2000	2001
NW Atlantic	* Longline	1262.2	1624.1	1872.3	1547.6	1220.8
	Gillnet	0.4	36.3	0.0	0.0	0.0
	Handline	1.3	0.0	5.0	7.7	8.6
	Trawl	8.0	5.9	7.5	10.9	2.5
	Troll	0.4	0.7	0.0	0.0	0.0
	* unclassified	11.9	9.1	3.8	1.4	1.8
	Harpoon	0.7	1.5	0.0	0.6	7.4
	** Rod and Reel	10.9	4.7	21.3	15.6	1.5
	Trap	0.0	0.1	**	0.0	0.0
Gulf of Mexico	* Longline	759.9	633.1	579.6	631.7	494.6
	Handline	0.0	0.0	**	1.2	0.3
Caribbean	* Longline	688.9	516.0	260.5	331.9	347.0
	Trap	0.0	0.0	0.0	0.3	0.0
	Gillnet	0.0	0.0	0.0	0.0	0.0
	Handline	0.0	0.0	0.0	0.0	0.0
NC Atlantic	* Longline	688.2	658.6	650.0	804.6	420.6
S Atlantic	* Longline	417.9	170.1	185.2	143.8	43.2
	All Gears& Areas	3850.7	3660.2	3585.2	3497.1	2568.4

* includes landings and estimated discards from scientific observer and logbook sampling programs.
** $\leq$ = 0.5 MT

Appendix Table 2.4-BIL. Landings (MT) and dead discards of Blue Marlin, White Marlin and Sailfish for 1998-2001.

		Blue Marlin				White Marlin				Sailfish			
Area	Gear	1998	1999	2000	2001	1998	1999	2000	2001	1998	1999	2000	2001
NW Atlantic	* Longline	23.3	22.0	28.8	10.9	15.3	18.6	10.3	5.1	6.4	13.7	11.2	2.2
	* * Unclassified	0.6	0.0	0.1	0.0	0.7	0.1	0.0	0.0	0.1	0.0	0.0	0.0
	Rod and reel	34.1 +?	24.8 +?	13.8 +?	9.0 +?	2.4 +?	1.5 +?	0.23 +?	2.8	0.1 +?	0.07 +?	1.75 +?	61.2
Gulf of Mexico	* Longline	18.5	55.2	29.6	9.4	11.8	31.5	29.9	10.1	17.0	57.4	33.9	8.2
	Rod and reel	4.5 +?	7.5 +?	4.7 +?	5.1 +?	0.2 +?	0.1 +?	0.0 +?	0.3	1.0 +?	0.6 +?	0.24 +?	0.6
Caribbean	* Longline	2.3	1.6	0.5	1.2	1.3	5.0	0.5	0.7	0.2	0.5	0.1	0.0
	Rod and reel	10.6 +?	4.6 +?	5.7 +?	2.3 +?	0.02 +?	0.0 +?	0.0 +?	0.0	0.05 +?	0.0 +?	0.06 +?	0.0 +?
	Other	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Unknown & NC Area 94a	* Longline	6.1	1.6	0.7	0.9	2.8	1.1	0.1	0.6	0.8	0.0	0.1	0.3
SW Atlantic	* Longline	1.6	1.7	0.0	0.0	0.9	0.5	0.0	0.0	2.7	0.0	0.1	0.0
	All Gears	101.6	119.0	83.8	41.0	35.4	58.3	41.0	21.0	28.3	72.3	47.3	72.7

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

Appendix Table 2.6a-SHK. Estimates of U.S. 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	26.48	58,367		1,627	21,968	117.64	2,584,316				23,595	2,642,683
1984	49.12	25.06	55,250		1,538	23,295	67.489	1,572,156				24,833	1,627,406
1985	57.99	29.59	65,227		1,969	92,998	38.224	3,554,756				94,967	3,619,982
1986	68.50	34.95	77,049	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	32,499	47.629	1,547,895	10,864	710.27	798,909	52,880	3,067,023
1996	402.03	205.12	760,364	81.934	9,280	21,573	33.697	726,945	22,153	949.22	1,067,682	53,006	2,554,992
1997	381.08	194.43	537,594	85.937	6,256	8,743	54.834	479,414	7,754	250.42	281,671	22,753	1,298,679
1998	267.07	136.26	505,275	74.007	6,827	11,762	35.977	423,161	6,002	280.09	315,044	24,591	1,243,480
1999	113.10	57.70	400,821	74.007	5,416	11,113	48.304	536,802	3,464	117.63	132,310	19,993	1,069,933
2000	191.15	97.53	350,705	74.007	4,739	13,346	16.749	223,532	7,495	216.13	243,102	25,580	817,339
2001	192.43	98.18	362,925	74.007	4,904	3,832	83.938	321,650	6,158	155.75	175,187	14,894	859,762

[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, 1995-1999 data are from the southeast quota monitoring program and southeast and northeast general canvass, data for 2001 were not yet available; 4 In pounds dressed weight from weighout data sheets, values for 1998-2001 are taken as the mean of 1986-1997 values; 5 1982-1994 data are taken directly from weighout data sheets, 1995-2001 data obtained by dividing values in fourth column (lb dw) by those in fifth column (av. weight); 6 Almost all recreational landings are from the MRFSS survey; 7 In pounds dressed weight; 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.

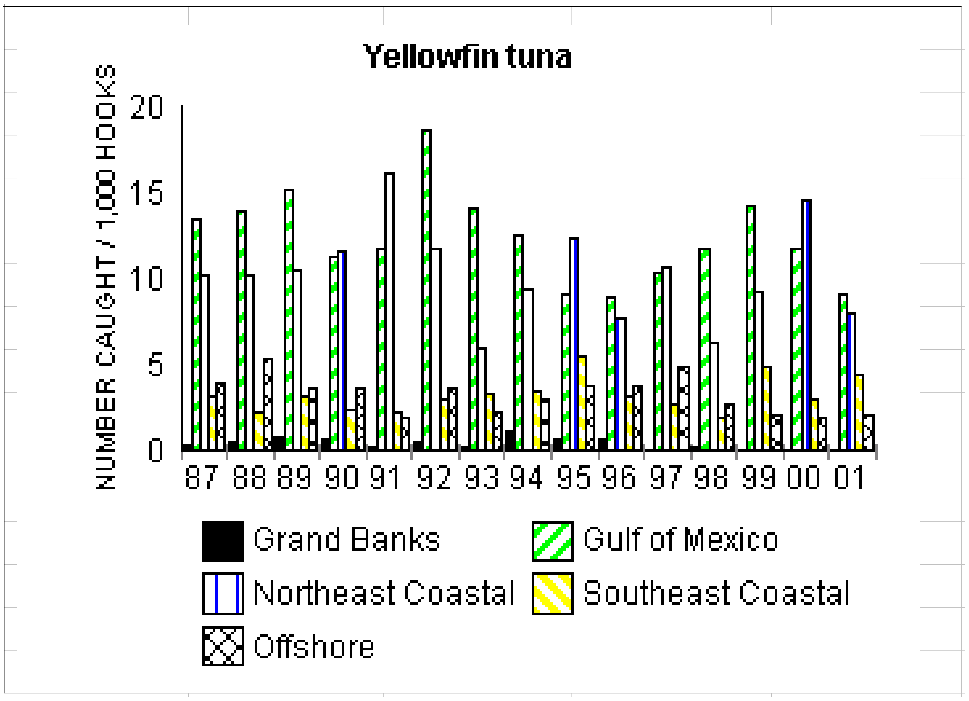
	Commercial					Recreational			Discards			Total	
Year	mt (ww) [1]	mt (dw) [2]	lb (dw) [3]	av. weight [4]	number [5]	number [6]	av. weight [7]	lb (dw)	number	mt (ww)	lb (dw) [8]	number	lb (dw)
1981						4,925	46.653	229,766				4,925	229,766
1982	0.00	0.00	0		0	0	46.653	-				0	0
1983	0.00	0.00	0		0	14,593	46.653	680,807				14,593	680,807
1984	0.00	0.00	0		0	2,579	46.653	120,318				2,579	120,318
1985	0.00	0.00	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	0.00	0.00	0	69.091	0	20,683	47.545	983,373	12,506	526.20	591,868	33,189	1,575,241
1988	0.10	0.05	112	69.091	4	12,235	32.62	399,106	12,934	421.16	473,719	25,173	872,937
1989	0.00	0.00	0	69.091	0	7,419	41.011	304,261	12,525	480.00	539,902	19,944	844,163
1990	0.25	0.13	286	69.091	6	1,745	56.134	97,954	13,141	741.33	833,845	14,892	932,084
1991	0.00	0.00	0	69.091	0	6,643	52.12	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	3,106	66.557	47	459	46.653	21,414	9,725	618.15	695,293	10,231	719,812
1996	5.40	2.76	17,920	70.819	253	11,224	34.07	382,402	18,996	710.69	799,381	30,473	1,199,703
1997	1.42	0.72	904	52.933	17	4,236	55.74	236,115	6,614	184.61	207,643	10,867	444,662
1998	2.87	1.46	706	69.091	10	6,085	46.653	283,884	5,295	195.25	219,616	11,390	504,206
1999	0.16	0.08	1,111	69.091	16	5,218	46.653	243,435	2,772	98.96	111,310	8,006	355,856
2000	0.61	0.31	3,508	69.091	51	7,010	46.653	327,038	6,298	137.19	154,311	13,359	484,856
2001	3.09	1.58	65	69.091	1	950	46.653	44,320	5,219	105.87	119,082	6,170	163,467

[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, 1995-1999 data are from the southeast quota monitoring program and southeast and northeast general canvass, data for 2001 were not yet available; 4 In pounds dressed weight from weighout data sheets, values for 1998-2001 are taken as the mean of 1986-1997 values; 5 1982-1994 data are taken directly from weighout data sheets, 1995-2001 data obtained by dividing values in fourth column (lb dw) by those in fifth column (av. weight); 6 Almost all recreational landings are from the MRFSS survey; 7 In pounds dressed weight; 8 Wet weight to dry weight conversion ratio is 1.96.

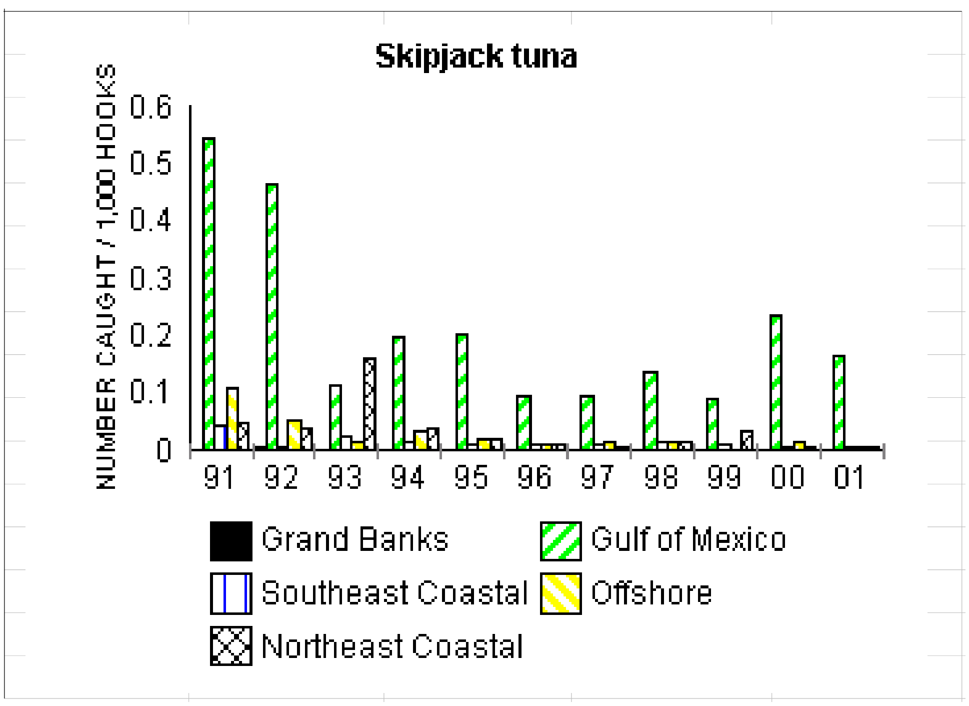
Appendix Table 2.6c-SHK. Estimates of commercial and recreational landings and dead discards for shortfin makos in the U.S. Atlantic, Gulf of Mexico, and Caribbean.

	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						4,925	46.653	229,766				4,925	229,766
1982	0.00	0.00	0		0	0	46.653	-				0	0
1983	0.00	0.00	0		0	14,593	46.653	680,807				14,593	680,807
1984	0.00	0.00	0		0	2,579	46.653	120,318				2,579	120,318
1985	0.00	0.00	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	0.00	0.00	0	69.091	0	20,683	47.545	983,373	12,506	526.20	591,868	33,189	1,575,241
1988	0.10	0.05	112	69.091	4	12,235	32.62	399,106	12,934	421.16	473,719	25,173	872,937
1989	0.00	0.00	0	69.091	0	7,419	41.011	304,261	12,525	480.00	539,902	19,944	844,163
1990	0.25	0.13	286	69.091	6	1,745	56.134	97,954	13,141	741.33	833,845	14,892	932,084
1991	0.00	0.00	0	69.091	0	6,643	52.12	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	3,106	66.557	47	459	46.653	21,414	9,725	618.15	695,293	10,231	719,812
1996	5.40	2.76	17,920	70.819	253	11,224	34.07	382,402	18,996	710.69	799,381	30,473	1,199,703
1997	1.42	0.72	904	52.933	17	4,236	55.74	236,115	6,614	184.61	207,643	10,867	444,662
1998	2.87	1.46	706	69.091	10	6,085	46.653	283,884	5,295	195.25	219,616	11,390	504,206
1999	0.16	0.08	1,111	69.091	16	5,218	46.653	243,435	2,772	98.96	111,310	8,006	355,856
2000	0.61	0.31	3,508	69.091	51	7,010	46.653	327,038	6,298	137.19	154,311	13,359	484,856
2001	3.09	1.58	65	69.091	1	950	46.653	44,320	5,219	105.87	119,082	6,170	163,467

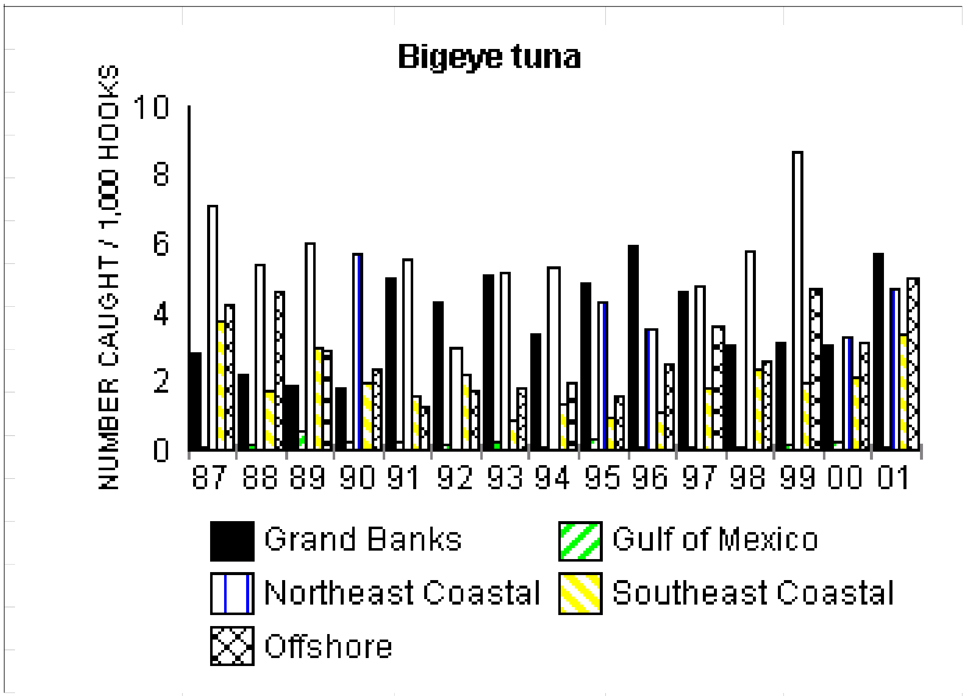
[1] From weighout data sheets; [2] Wet weight to dry weight conversion ratio is 1.96; [3] 1982-1994 data are from weighout data sheets, 1995-1999 data are from the southeast quota monitoring program and southeast and northeast general canvass, data for 2001 were not yet available; 4 In pounds dressed weight from weighout data sheets, values for 1998-2001 are taken as the mean of 1986-1997 values; 5 1982-1994 data are taken directly from weighout data sheets, 1995-2001 data obtained by dividing values in fourth column (lb dw) by those in fifth column (av. weight); 6 Almost all recreational landings are from the MRFSS survey; 7 In pounds dressed weight; 8 Wet weight to dry weight conversion ratio is 1.96.



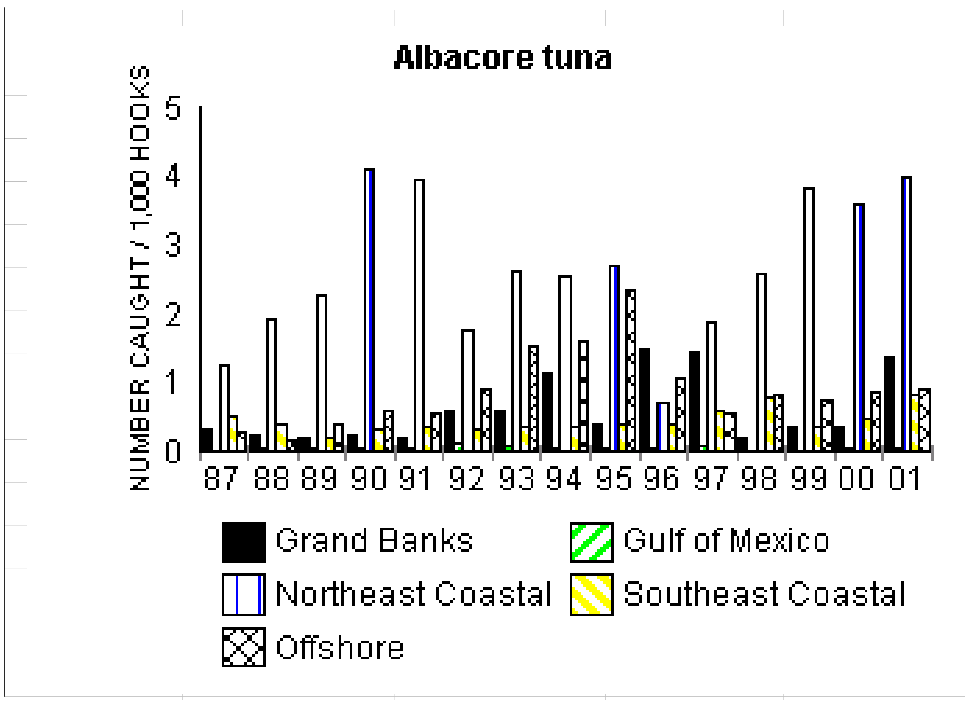
***Appendix Figure 2.1-YFT**. Nominal catch rates for YFT in US Longline logbook reports.*



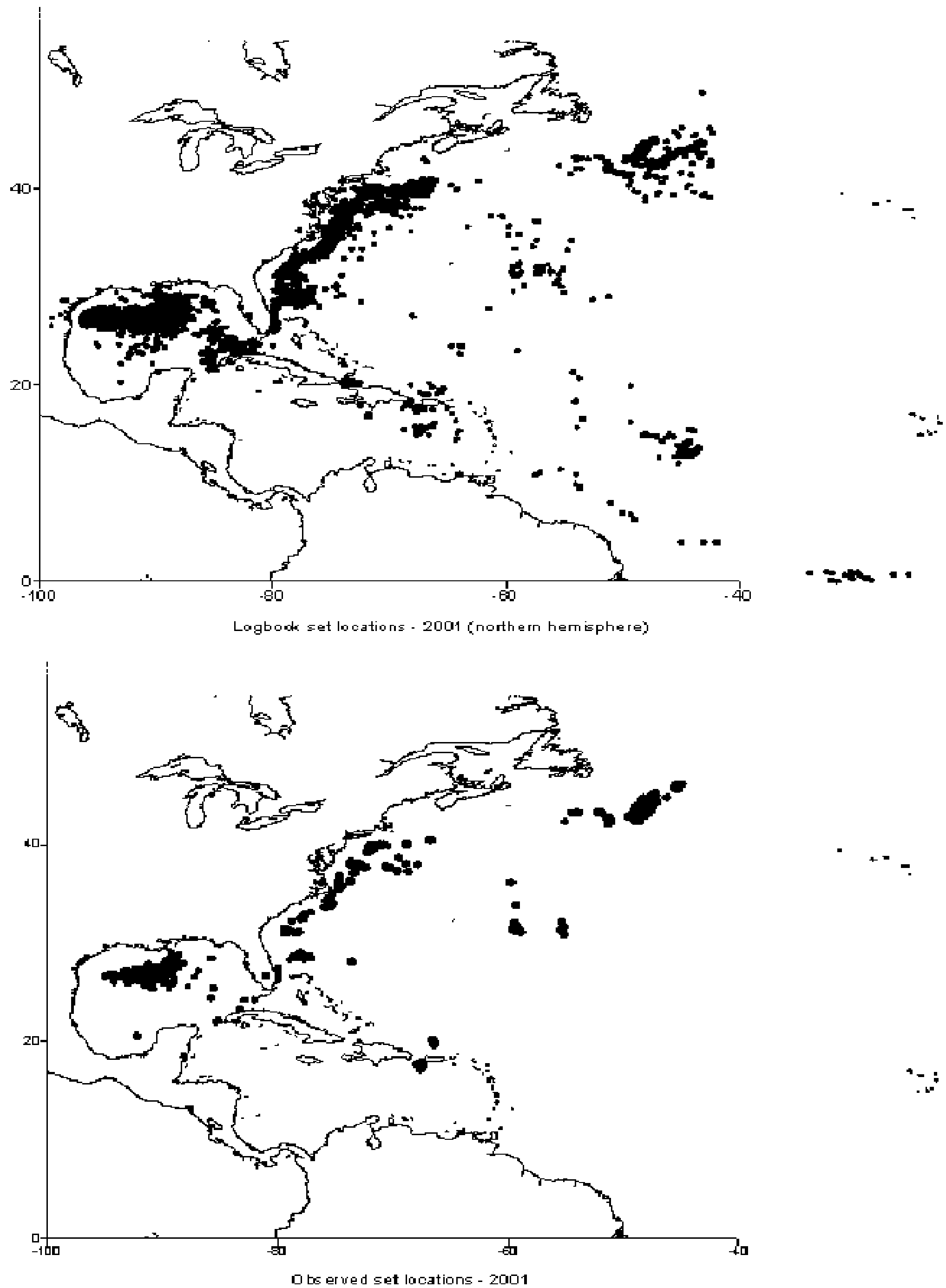
***Appendix Figure 2.1-SKJ**. Nominal catch rates for SKJ in US Longline logbook reports.*



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



***Appendix Figure 2.2 - ALB.** Nominal catch rates for ALB in US Longline logbook reports.*



Appendix Figure 2.2 -Observers. Reported (upper) and observed (lower) longline positions in 2001.

Appendix: Information Release on 2002 Central North Atlantic Bluefin Tuna Research Program

This information release has been prepared by the Central North Atlantic Bluefin Tuna Research Program Steering Committee. The Steering Committee is composed of Dr. Molly Lutcavage (New England Aquarium), Dr. Brian Luckhurst (Fisheries Division, Bermuda), Dr. Julie Porter (Fisheries and Oceans Canada), Dr. Scott Heppell (Oregon State University), Dr. John Lamkin and Dr. Richard Brill (National Marine Fisheries Service), and Dr. Ziro Suzuki (Japan Far Seas Fisheries Institute).

Objectives: The main purpose of this international research program, endorsed by the International Commission for the Conservation of Atlantic Tunas (ICCAT), is to establish the reproductive and biological status of adult bluefin tuna (ABFT) in the central north Atlantic. The research team is investigating the hypothesis that ABFT are concentrated along oceanographic features that are suitable for spawning. Other large pelagic species including bigeye, yellowfin, and albacore tunas, swordfish, white marlin, and sharks are also being investigated and their offshore habitats defined.

Background: This research program was undertaken to identify the little known biological status of ABFT in the central north Atlantic. Historic catches show their presence there, and fishery-independent electronic tagging of ABFT in the western Atlantic showed that at least 30% of tagged bluefin each year were located in the eastern management zone (designated by ICCAT) when their tags reported. Further, at that time, none of these fish were located in either known spawning ground (Gulf of Mexico or Mediterranean Sea), raising the possibility of a previously unknown spawning area in the central north Atlantic. Other ABFT tagged with implanted archival tags also showed residency in this poorly-studied area. Results may have implications critical to the international management of the species, particularly regarding the western and eastern management units. Consequently, the first exploratory fishing cruises since the 1960's have been undertaken targeting bluefin tuna.

2002 Fishing: This exploratory fishing research, begun in 2001, continues in 2002 on two platforms: a U.S. commercial longliner, and the Japanese research vessel Shoyo-maru. The cruises were undertaken to establish the biological status of ABFT (and other large pelagic species), and to determine whether they are concentrated along the edge of oceanographic features suitable for spawning and larval development. The vessels make longline sets based on recommendations by the Steering Committee and Chief Scientist (on board), in consultation with experts in remote sensing and forecasting technology (from Roffs, Inc., Miami, and the Rosenstiel School of Marine and Atmospheric Research, University of Miami).

Exploratory fishing was conducted in the central north Atlantic between May 3 and July 5, 2002, on the longline vessel Eagle Eye II. The Central North Atlantic Steering Committee selected the bid of Eagle Eye II Corporation (United States) after a thorough review of competitive bids submitted by Canadian and U.S. companies. The National Oceanic and Atmospheric Administration chartered the Eagle Eye II through a cooperative grant with the New England Aquarium. The charter was awarded based on the strength of the vessel's bid and the established bluefin fishing expertise of the captains and crew.

Twenty-nine longline sets (~ 21,000 hooks) were made between May 6 and June 30, 2002. The timing and location of fishing was based on electronic tagging data, real time oceanographic conditions, and input from fishing experts. ABFT require a minimum of 24ºC for spawning, and the exploratory fishing cruise was consistent with this temperature requirement as well as those regarding line depth and set time. Unfortunately, while most species typically captured by longline at this time of year were encountered, no ABFT were captured. The cruise was impacted by regulations pertaining to potential sea turtle take, and the vessel was prohibited from entering the target research area in the Northeast Distant Fishing Zone (the area bounded from 35 to 55º N and 20 to 60º W).

Given the variability in annual movements of this highly migratory species, and shifting environmental conditions in the central north Atlantic, the fact that no ABFT were captured is not unusual. Plankton samples taken have yet to be analyzed and will be reported on in due course. As one would expect of an expedition of this magnitude, preliminary indications suggest important new findings for some of the species captured; these findings will be elaborated on when analyses are complete.

Exploratory fishing for ABFT is also underway in the central north Atlantic (June 15-August 17, 2002) aboard the Japanese research vessel Shoyo-maru, in cooperation with the National Research Institute of Far Seas Research (Japan). As on the Eagle Eye II, scientists hope to capture reproductive sized tunas to study gonads, stomach contents, blood, vertebrae, and otoliths for reproductive, aging, and genetic analyses. Plankton nets are also being deployed in an attempt to capture larval fish and eggs.

Following completion of work aboard the Shoyo-maru, the Steering Committee will meet to discuss the future direction of the Research Program, including the release of results and preparation of manuscripts.

Quota and monitoring: There has been a system of daily hails for the duration of the cruises, and full monitoring of the entire catch at offloading, in accordance with the ICCAT Recommendation concerning this research.

The Steering Committee gratefully acknowledges financial and in-kind contributions from Fisheries and Oceans Canada, National Marine Fisheries Service, Fisheries Division of Bermuda, New England Aquarium, Canadian Bluefin Research Fund, Oregon State University, and the Japan Far Seas Fisheries Institute.