

2014

Stock Assessment and Fishery Evaluation (SAFE) Report

for Atlantic Highly Migratory Species

NOAA FISHERIES

2014
Stock Assessment and Fishery Evaluation (SAFE) Report for Atlantic Highly Migratory Species

Atlantic Highly Migratory Species Management Division
December 2014

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Cover images (from top left): Recreational fishing vessel in tournament; tournament-caught yellowfin tuna (photo credits: Katie Davis); tiger shark in cradle during the 2014 NOAA R/V *Oregon II* bottom longline cruise (photo credit: Alexis Jackson); and recreationally-caught sailfish boatside before release (photo credit: Randy Blankinship).

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LIST OF COMMONLY USED ACRONYMS

AA	Assistant Administrator for Fisheries
ABC	Acceptable biological catch
ACCSP	Atlantic Coastal Cooperative Statistics Program
ACL	Annual catch limit
ACS	Angler consumer surplus
ACT	Annual catch target
ALWTRT/P	Atlantic Large Whale Take Reduction Team/Plan
AM	Accountability measure
ANPR	Advanced notice of proposed rulemaking
AOCTRP	Atlantic Offshore Cetacean Take Reduction Plan
AP	Advisory panel
APA	Administrative Procedure Act
ASMFC	Atlantic States Marine Fisheries Commission
ATCA	Atlantic Tunas Convention Act
B	Biomass
BAYS	Bigeye, albacore, yellowfin, skipjack tunas
BFT	Bluefin tuna
BiOp	Biological opinion
B_{MSY}	Biomass expected to yield maximum sustainable yield
B_{OY}	Biomass expected to yield optimum yield
CAR	Caribbean
CFMC	Caribbean Fishery Management Council
CFL	Curved fork length
CFR	Code of Federal Regulations
CHB	Charter/headboat
CIE	Center for Independent Experts
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COASTSPAN	Cooperative Atlantic States Shark Pupping and Nursery survey
CPC	Contracting parties, non-contracting parties, entities, or fishing entities
CPUE	Catch per unit effort
CSFOP	Commercial shark fishery observer program
CZMA	Coastal Zone Management Act
DEIS	Draft environmental impact statement
DPS	Distinct population segment
dw	Dressed weight
EA	Environmental assessment
EEZ	Exclusive economic zone
EFH	Essential fish habitat
EFP	Exempted fishing permit
EIS	Environmental impact statement
EO	Executive order
ESA	Endangered Species Act
F	Instantaneous fishing mortality
FAD	Fish aggregating device
FAO	Food and Agriculture Organization
FEC	Florida East coast
FEIS	Final environmental impact statement
FL	Fork length
FMP	Fishery management plan
F_{MSY}	Instantaneous fishing mortality rate expected to yield maximum sustainable yield
FMU	Fishery management unit
F_{OY}	Fishing mortality rate expected to yield optimum yield
FR	Federal Register
FRFA	Final regulatory flexibility analysis
GOM	Gulf of Mexico
GSAFF	Gulf and South Atlantic Fishery Foundation
GMFMC	Gulf of Mexico Fishery Management Council
GULFSPAN	Gulf of Mexico Shark Pupping and Nursery survey
GSMFC	Gulf States Marine Fisheries Commission
HAPC	Habitat area of particular concern
HMS	Highly migratory species: Atlantic sharks, tunas, swordfish, and billfish
HMS FMP	Consolidated Highly Migratory Species Fishery Management Plan
ICCAT	International Commission for the Conservation of Atlantic Tunas
IMO	International Maritime Organization
IPOA	International plan of action
IRFA	Initial regulatory flexibility analysis
ITP	International trade permit
ITQ	Individual transferable quota
ITS	Incidental take statement
IUU	Illegal, unreported, unregulated
LAP	Limited access permit
LCS	Large coastal sharks
LOA	Letter of acknowledgment
LPS	Large Pelagics Survey
LWTRT/P	Large Whale Take Reduction Team/Plan
MAB	Mid Atlantic Bight
MAFMC	Mid-Atlantic Fishery Management Council

Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MFMT	Maximum fishing mortality threshold
MMPA	Marine Mammal Protection Act
MPA	Marine protected area
MRFSS	Marine Recreational Fishing Statistics Survey
MRIP	Marine Recreational Information Program
MSST	Minimum stock size threshold
MSY	Maximum sustainable yield
mt	Metric tons
NCA	North Central Atlantic
NEC	Northeast Coastal
NED	Northeast Distant Waters
NEFMC	New England Fishery Management Council
NEFSC	Northeast Fisheries Science Center
NEPA	National Environmental Policy Act
GARFO	Greater Atlantic Regional Fisheries Office
NGO	Non-governmental organization
nmi	Nautical mile
NOA	Notice of Availability
NMFS	National Marine Fisheries Service
NOAA	National Oceanographic and Atmospheric Administration
NOI	Notice of Intent
NPOA	National Plan of Action
NS	National Standards
NWGB	National Working Group on Bycatch
OSF	Office of Sustainable Fisheries
OY	Optimum yield
PLTRT/P	Pelagic Longline Take Reduction Team/Plan
PLL	Pelagic longline
POP	Pelagic observer program
OPR	Office of Protected Resources
PRA	Paperwork Reduction Act
Reg Flex Act	Regulatory Flexibility Act
RFMO	Regional Fishery Management Organization
RIR	Regulatory Impact Review
RPAs	Reasonable and Prudent Alternatives
RPMs	Reasonable and Prudent Measures
SAB	South Atlantic Bight
SAFE	Stock Assessment and Fishery Evaluation
SAFMC	South Atlantic Fishery Management Council
SAR	Sargasso
SBRM	Standardized bycatch reporting methodology
SCRS	Standing Committee for Research and Statistics
SCS	Small coastal sharks
SDC	Status determination criteria
SEFSC	Southeast Fisheries Science Center
SEIS	Supplemental environmental impact statement
SERO	Southeast Regional Office
SEW	Stock evaluation workshop
SFA	Sustainable Fisheries Act
SFL	Straight fork length
SRP	Scientific research permit
SSB	Spawning stock biomass
SWO	Swordfish
TAC	Total allowable catch
TAL	Total allowable landings
TCs	Terms and Conditions
TL	Total length
TUN	Tuna North
TUS	Tuna South
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
UVI	Unique Vessel Identifier
VMS	Vessel monitoring system
VTR	Vessel trip report
WTP	Willingness to pay
ww	Whole weight
YOY	Young of the year

EXECUTIVE SUMMARY

This 2014 Stock Assessment and Fisheries Evaluation (SAFE) Report is produced by the National Marine Fisheries Service (NMFS) Highly Migratory Species (HMS) Management Division. It contains a review of the current status of Atlantic HMS stocks (tunas, swordfish, billfish, and sharks) and describes the year's accomplishments in managing Atlantic HMS. Atlantic HMS SAFE Reports provide the public with information on the latest developments in Atlantic HMS management and fulfill Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) requirements.

Since the last HMS SAFE Report (January 2014), the HMS Management Division: held two HMS Advisory Panel meetings; published several rules regarding HMS fisheries, including a proposed rule regarding smoothhound sharks and gillnet fishing for sharks (Draft Amendment 9; 79 FR 56047), a predraft document to consider stock status adjustments for Atlantic sharpnose and bonnethead sharks based on the 2013 SEDAR findings, as well as a range of other management measures for the commercial shark fisheries (Predraft Amendment 6), a final rule implementing regulations for port inspection, at-sea transshipment, and unique vessel identifiers (79 FR 72557), a final rule establishing quotas and opening dates for the 2015 commercial shark fisheries (79 FR 71331), and a final rule implementing an array of bluefin tuna management measures and limited northern albacore provisions (Amendment 7; 79 FR 71510); implemented specifications to adjust quotas for Atlantic bluefin tuna and North and South Atlantic swordfish (79 FR 38255 and 49719, respectively); released the final Atlantic HMS Management-Based Research Needs and Priorities document (79 FR 69097); solicited and reviewed new information for the 5-year review of Atlantic HMS essential fish habitat (EFH); and enacted several inseason actions for HMS.

In November 2014, the 19th Special Meeting of the International Commission for the Conservation of Atlantic Tunas (ICCAT) was held, during which the United States helped develop recommendations to promote the conservation, management, and rebuilding of Atlantic HMS stocks. At this meeting, ICCAT adopted recommendations regarding Western Atlantic and Eastern Atlantic/Mediterranean bluefin tunas; Atlantic shortfin mako sharks; and measures to further enhance fishery monitoring, control, and surveillance.

Several stocks of HMS underwent international stock assessments in 2014: Western Atlantic and Eastern Atlantic/Mediterranean bluefin tuna (both as updates to 2012 assessments), West Atlantic skipjack tuna, and Eastern Atlantic skipjack tuna. NMFS continued shark nursery grounds research and EFH studies through two programs (COASTSPAN and GULFSPAN) along the U.S. Atlantic, Gulf of Mexico, and Caribbean.

Much of the data in this report is based on final reports of 2013 data that were completed and/or published in 2014. Domestic fishery landings and bycatch data are presented from the U.S. Annual Report to ICCAT, and directly from NMFS program databases including commercial landings from the HMS and Coastal Fisheries Logbook Programs, the Pelagic Longline and Southeast Gillnet and Bottom Longline Observer Programs, the Electronic Dealer Reporting Program (eDealer) and the Commercial Bluefin Tuna Landings Database; and recreational landings from the Large Pelagics Survey, the Recreational Billfish Survey, and the HMS Recreational Reporting Program. NMFS permits data are presented from the Office of

Science and Technology's International Trade Permit Database, the Northeast and Southeast Regional Permits Offices' Databases, the HMS Permits Database, the HMS Exempted Fishing Permits, Display Permits, and Scientific Research Permits Database, and the HMS Tournament Registration Database.

International landings data are presented from the ICCAT Standing Committee on Research and Statistics' annual report. International trade data are presented from the National Seafood Inspection Laboratory's Bluefin Tuna Catch Document and Swordfish Statistical Document Programs, the U.S. Census Bureau, and U.S. Customs and Border Protection.

The Regulatory Flexibility Act requires periodic review of existing regulations that had or will have a significant economic impact on a substantial number of small entities. Thus, consistent with NMFS's plan for this periodic review, this SAFE Report reviews the following regulations: In 2007, Atlantic Commercial Shark Management Measures, Gear Operation and Deployment, and Complementary Closures; U.S. Atlantic Swordfish Fishery Management Measures; and Atlantic Swordfish Quotas; in 2008, the International Trade Permit Program and Bluefin Tuna Catch Documentation Program; Atlantic Shark Management Measures; Renewal of Atlantic Tunas Longline Limited Access Permits and Atlantic Shark Dealer Workshop Attendance Requirements; and Atlantic Tuna Fisheries, Pelagic and Bottom Longline Fisheries, Gear Authorization, and Turtle Control Devices.

Community profiles of the HMS fisheries from the 2010 national census were presented in the 2011 and 2012 SAFE Reports. Impacts to these communities from the major storms in 2013 are presented in this report. Finally, the NMFS Office of Science and Technology has developed tools for social impact anlyses, from which the vulnerability or resilience to potential economic disruptions resulting from regulations, social changes, or natural disasters, assessed in 2013, are presented for twenty-five HMS fishing communities.

Feedback and comments on this SAFE Report are encouraged and should be sent to the HMS Management Division, 1315 East West Highway, Silver Spring, MD 20910, phone: (301) 427-8503, fax: (301) 713-1917.

1. INTRODUCTION

The Magnuson-Stevens Act is the primary Federal legislation governing the management and executive processes for marine fisheries of the United States. The National Standard (NS) 2 guidelines (50 CFR 600.315) require NMFS to prepare a SAFE Report, or similar document, review it annually, and make changes as necessary for each fishery management plan (FMP). This document constitutes the 2014 SAFE Report for Atlantic HMS managed under the 2006 Consolidated Atlantic HMS FMP and its amendments.

Consistent with the NS 2 guidelines, this SAFE Report provides a summary of the best available scientific information on the condition of HMS stocks, marine ecosystems, and fisheries managed under Federal regulation. It also provides updated information regarding the economic status of HMS fisheries, fishing communities, and industries, as well as the socio-economic and environmental impacts of recently implemented regulations.

NMFS uses the SAFE Report as a method to introduce new information and identify potential management issues. This SAFE Report includes information from the latest stock assessment data, and a summary of recommendations and resolutions from the International Commission for the Conservation of Atlantic Tunas (ICCAT) and its Standing Committee on Research and Statistics (SCRS). The report also includes the latest domestic shark stock assessment information. In compliance with the NS 2 guidelines, the report presents a comprehensive summary of the most recent Atlantic HMS fisheries-related data from a variety of sources across a wide range of disciplines.

1.1 Agency Activities and Regulatory Actions for HMS

From January through December, 2014, NMFS proposed or implemented a number of actions with regard to Atlantic HMS. These actions were published in the Federal Register and are listed in Table 1.1. Actions published from December 14, 2013 – January 1, 2014 are also included, as they were published after release of the 2013 Atlantic HMS SAFE Report. Most documents related to these and previous actions are available on the Atlantic HMS website at http://www.nmfs.noaa.gov/sfa/hms/ or by calling the HMS Management Division at (301) 427-8503.

NMFS held two Atlantic HMS Advisory Panel meetings in 2014: April 3-4 in Silver Spring, MD, and September 10-11 in Bethesda, MD. These meetings provided valuable opportunities for comments on a suite of management actions that NMFS pursued or considered in 2014. Meeting presentations and transcripts are posted on the HMS website.

On March 24, 2014, NMFS published a notice of initiation of 5-year EFH review and request for information (79 FR 15959). NMFS also solicited new information from HMS consulting parties, the HMS Advisory Panel, and other interested parties. Published and unpublished scientific reports, fishery dependent and independent datasets, and expert and anecdotal information detailing the habitats used by Atlantic HMS are being evaluated and synthesized with existing species and habitat descriptions into a 5-year review document.

On March 31, 2014, NMFS requested reinitiation of Section 7 consultation under the Endangered Species Act (ESA) on the Atlantic pelagic longline fishery. Despite sea turtle takes

that were lower than specified in the ITS, leatherback mortality rates and total mortality levels had exceeded the level specified in the reasonable and prudent alternative[s] (RPA[s]) in the 2004 biological opinion. Additionally, new information has become available about leatherback and loggerhead sea turtle populations and sea turtle mortality. While the mortality rate measure will be re-evaluated during consultation, the overall ability of the RPA to avoid jeopardy is not affected, and NMFS is continuing to comply with the terms and conditions of the RPA and RPMs pending completion of consultation. NMFS also has confirmed that there will be no irreversible or irretrievable commitment of resources that would foreclose the formulation or implementation of any reasonable and prudent alternative measures pending completion of consultation, consistent with section 7(d) of the Act.

On July 3, 2014, NMFS issued the final determination to list the Central and Southwest Atlantic Distinct Population Segment (DPS) of scalloped hammerhead shark (*Sphyrna lewini*) as a threatened species pursuant to the ESA. On August 27, 2014, NMFS published a final rule to list the following 20 coral species as threatened: five in the Caribbean including Florida and the Gulf of Mexico (*Dendrogyra cylindrus*, *Orbicella annularis*, *O. faveolata*, *O. franksi*, and *Mycetophyllia ferox*); and 15 in the Indo-Pacific (*Acropora globiceps*, *A. jacquelineae*, *A. lokani*, *A. pharaonis*, *A. retusa*, *A. rudis*, *A. speciosa*, *A. tenella*, *Anacropora spinosa*, *Euphyllia paradivisa*, *Isopora crateriformis*, *Montipora australiensis*, *Pavona diffluens*, *Porites napopora*, and *Seriatopora aculeata*). Additionally, in that August 2014 rule, two species that had been previously listed as threatened (*A. cervicornis* and *A. palmata*) in the Caribbean were found to still warrant listing as threatened. The Central and Southwest Atlantic DPS of scalloped hammerhead sharks and seven Caribbean species of corals occur within the management area of Atlantic HMS commercial and recreational fisheries which are managed by NMFS's Office of Sustainable Fisheries, HMS Management Division. Therefore, on October 30, 2014, NMFS requested reinitiation of ESA section 7 consultation on the continued operation and use of HMS gear types (bandit gear, bottom longline, buoy gear, handline, and rod and reel) and associated fisheries management actions in the 2006 Consolidated Atlantic HMS FMP and its amendments.

On July 7, 2014, NMFS published final bluefin tuna specifications (79 FR 38255) that adjusted the annual U.S. baseline bluefin tuna quota recommended by ICCAT to account for underharvest of the adjusted 2013 U.S. bluefin quota. The final rule: Allocated the full 2014 baseline quotas to all directed categories, including the Purse Seine category, and the Reserve category; used an updated estimate of bluefin tuna dead discards of 140.8 mt that could be expected in 2014; accounted for half of the dead discard estimate up front in the specifications process, as proposed; and allocated 99.2 mt to the Longline category, not including the separate 25-mt allocation for the Northeast Distant Gear Restricted Area.

On August 7, 2014, NMFS published a proposed rule (79 FR 46217) for Amendment 9 to the 2006 Consolidated Atlantic HMS FMP. This proposed rule considered: 1) establishing an effective date for previously-adopted smoothhound shark management measures finalized in Amendment 3 to the 2006 Consolidated HMS FMP and in the 2011 HMS Trawl Rule; 2) adjusting the commercial quota for the smoothhound shark fishery based on updated landings data; 3) implementation of the smooth dogfish-specific provisions of the Shark Conservation Act of 2010; 4) implementation of shark gillnet fishing requirements to comply with the 2012 Shark biological opinion; and, 5) making geographic applicability of Atlantic shark gillnet VMS requirements consistent with the Atlantic Large Whale Take Reduction Plan requirements. The

comment period for the proposed rule closed on November 14, 2014, and a final rule is expected sometime in 2015.

On August 22, 2014, NMFS published final North and South Atlantic swordfish specifications (79 FR 49719) that adjusted the 2014 fishing season quotas for North and South Atlantic swordfish based upon 2013 commercial quota underharvests and international quota transfers consistent with the ICCAT Recommendations 13-02 and 13-03. Additionally, this final rule modified regulations to reflect that carryover of underharvest of North Atlantic swordfish accrued in 2014 and beyond is limited to 15 percent of the United States' baseline quota, consistent with Recommendation 13-02.

Based on this determination and results of the SEDAR 34 assessment, NMFS intends to consider implementing total allowable catches (TAC) and commercial quotas for the non-blacknose SCS complexes in the Atlantic and Gulf of Mexico regions in a proposed rule for Amendment 6 to the 2006 Consolidated HMS FMP. The proposed rule could consider a range of other management measures for the commercial shark fisheries including modifying the commercial retention limits, implementing regional and sub-regional quotas in the Atlantic and Gulf of Mexico, and removing upgrading restrictions for shark directed permit holders.

On November 20, 2014, NMFS announced the availability of the Final Atlantic HMS Management-Based Research Needs and Priorities document. This document was developed by the HMS Management Division of NOAA Fisheries to communicate key research needs that directly support Atlantic HMS management. The document contains a list of near- and long-term research needs and priorities that can be used by individuals and groups interested in Atlantic HMS to identify key research needs, improve management, reduce duplication, prioritize limited funding, and form a potential basis for future funding.

On December 2, 2014, NMFS published a final rule (79 FR 71331) that establishes quotas and opening dates for the 2015 Atlantic commercial shark fisheries. The quota adjustments are based on over- and/or underharvests experienced during 2014 and previous fishing seasons. In addition, the 2015 Atlantic commercial shark fishing seasons for the Gulf of Mexico blacktip shark, Gulf of Mexico aggregated LCS, Gulf of Mexico hammerhead shark, non-blacknose shark SCS, blacknose shark, sandbar shark, blue shark, and pelagic shark (other than porbeagle or blue sharks) management groups in the northwestern Atlantic Ocean, including the Gulf of Mexico and the Caribbean Sea, will open on January 1, 2015. The aggregated LCS and hammerhead shark management groups in the Atlantic region will open on July 1, 2015.

On December 2, 2014, NMFS published a final rule (79 FR 71510) to implement Amendment 7 to the 2006 Consolidated HMS FMP. The final rule implements measures to address ongoing management challenges in the Atlantic bluefin tuna fishery as well as minor regulatory changes to the management of other Atlantic HMS. Amendment 7 implements the following: 1) revised allocations of U.S. bluefin tuna quota among domestic fishing categories; 2) new measures applicable to the pelagic longline fishery, including Individual Bluefin Quotas (IBQs), two new Gear Restricted Areas, closure of the pelagic longline fishery when annual bluefin tuna quota is reached, elimination of target catch requirements associated with retention of incidental bluefin tuna in the pelagic longline fishery, mandatory retention of legal-sized bluefin tuna caught as bycatch, and expanded monitoring requirements, including electronic

monitoring via cameras and bluefin tuna catch reporting via Vessel Monitoring System (VMS); 3) revised transiting provisions for pelagic and bottom longline vessels; 4) VMS use and reporting by the Purse Seine category; 5) changes to the start date of the Purse Seine category from July 15 to a date within a range of June 1 to August 15, to be established by an annual action; 6) use of the online Catch Reporting System by the General, Harpoon, and Charter/Headboat categories; 7) additional flexibility for inseason adjustment of the General category quota and Harpoon category retention limits; 9) changes to the availability of purse seine quota for purse seine fishery participants based on the previous year's catch and provisions for trade of purse seine quota with IBQ participants; and 10) changes to the allocation of the Angling category Trophy South subquota for the Gulf of Mexico. Also, Amendment 7 implements several measures not directly related to bluefin tuna management, including a U.S. North Atlantic albacore tuna quota and modified rules regarding permit category changes.

With two exceptions, the effective date of Amendment 7 measures is January 1, 2015. The effective date for the electronic monitoring requirements is being delayed for an effective date of June 1, 2015, rather than the originally-proposed January 1, 2015. This delay is intended to allow fishery participants to coordinate system installations in an efficient manner while mitigating any impacts on regular fishing operations. Under the IBQ program, the requirement for a minimum IBQ allocation for a permit holder to depart on a fishing trip using pelagic longline gear will be effective January 1, 2016, rather than the originally-proposed January 1, 2015. The later effective date will provide flexibility for IBQ participants to adapt their fishing practices by allowing some accrual of quota debt beyond the trip level in the initial year, while still requiring annual accountability for that quota debt, and provides time for permitted vessel owners or operators to become familiar with the new IBQ, VMS, and electronic monitoring systems and requirements.

To further combat illegal, unregulated, and unreported (IUU) fishing activities, and to strengthen its monitoring, control, and surveillance regime, ICCAT in 2012 and 2013 adopted recommendations that pertain to the transshipment of Atlantic HMS (Recommendation 12-06); international port inspection for vessels landing Atlantic HMS in foreign ports or making port calls in foreign ports (Recommendation 12-07); and, unique vessel identifiers (Recommendation 13-13). In response, on December 8, 2014, NMFS published a final rule (79 FR 72557) to implement these recommendations. The resulting regulations prohibit the transfer of any tuna, tuna-like species, or other HMS between HMS-permitted vessels (or vessels required to have an Atlantic HMS permit) both in port and at sea, and also prohibit the transfer of these species outside the ICCAT Convention Area, regardless of where the fish were harvested. The sole exception is that Atlantic tuna Purse Seine category vessels would continue to be allowed to transfer Atlantic bluefin tuna from the catch vessel to the receiving vessel.

NMFS also implemented regulations for U.S.-permitted vessels landing tuna, tuna-like species, or other HMS in foreign ports or making port calls in foreign ports. The final rule describes additional information about notification requirements prior to arrival in a foreign port, additional items that may be inspected by an authorized official of a Port State, and procedures for reporting the results by a Port State of any inspection conducted by an authorized official of the Port State. These regulations will ensure that U.S.-permitted vessels have the most current information when landing HMS in foreign ports or making port calls in foreign ports.

ICCAT Recommendation 13-13 requires vessels 20 meters or greater to obtain an International Maritime Organization (IMO)/Lloyd's Registry (LR) number by no later than January 1, 2016. While no regulatory changes for Recommendation 13-13 are being implemented, vessel owners of commercial HMS-permitted vessels (20 meters or greater in length) will need to obtain an IMO/LR number and include that number on their permit application by no later than January 1, 2016. For more information about obtaining an IMO/LR number, please visit: http://www.imonumbers.lrfairplay.com/.

Table 1.1 Summary of NMFS' Atlantic HMS Federal Management Actions from December 14, 2013 to December 17, 2014

Federal Register Cite	Date	Rule or Notice
		HMS Fisheries (General)
79 FR 13040	3/7/2014	Notice for Atlantic Shark Identification Workshops, and Protected Species, Release, Disentanglement, and Identification Workshops
79 FR 14483	3/14/2014	Notice of Public Meeting for the Atlantic HMS Advisory Panel
79 FR 15959	3/24/2014	Initiation of 5-Year EFH Review
79 FR 32533	6/5/2014	Notice for Atlantic Shark Identification Workshops, and Protected Species, Release, Disentanglement, and Identification Workshops
79 FR 39367	7/10/2014	Notice of Availability of the Atlantic HMS Management-Based Research Needs and Priority Document
79 FR 48125	8/15/2014	Notice of Public Meeting for the Atlantic HMS Advisory Panel
79 FR 52305	9/3/2014	Notice for Atlantic Shark Identification Workshops, and Protected Species, Release, Disentanglement, and Identification Workshops
79 FR 54247	9/11/2014	Proposed Rule Addressing the Transshipment of Atlantic HMS, Inspection of Vessels Landing HMS in Foreign Ports, and Unique Vessel Identifiers
79 FR 63602	10/24/2014	Notice to Request Nominations for the Atlantic HMS Advisory Panel
79 FR 63896	10/27/2014	Notice of Intent to Issue Exempted Fishing Permits (EFPs), Scientific Research Permits (SRPs), Display Permits, Letter of Acknowledgement (LOAs), and Chartering Permits
79 FR 68135	11/14/2014	Technical Amendment to the Atlantic HMS Regulations
79 FR 69097	11/20/2014	Final Atlantic HMS Management-Based Research Needs and Priorities
79 FR 71982	12/4/2014	Notice for Atlantic Shark Identification Workshops, and Protected Species, Release, Disentanglement, and Identification Workshops
79 FR 72557	12/8/2014	Final Rule Addressing the Transshipment of Atlantic HMS, Inspection of Vessels Landing HMS in Foreign Ports, and Unique Vessel Identifiers for Commercially Permitted Vessels Greater Than 20 Meters
		Bluefin and BAYS Tunas
78 FR 77362	12/23/2013	Inseason Action to Adjust the General Category (Commercial) Atlantic Bluefin Tuna Retention Limit for January 2014
78 FR 78322	12/26/2013	Public Hearings Conference Call and Webinar for Draft Amendment 7 to the 2006 Consolidated HMS FMP
79 FR 15924	3/24/2014	Inseason Action to Close the General Category (Commercial) Atlantic Bluefin Tuna Fishery
79 FR 18870	4/4/2014	Proposed Rule for the 2014 Bluefin Tuna Quota Specifications
79 FR 20108	4/11/2014	Inseason Action to Close the Angling Category Atlantic Bluefin Tuna Southern Area Trophy Fishery
79 FR 25707	5/6/2014	Inseason Action to Adjust the Atlantic Bluefin Tuna Recreational Daily Retention Limit
79 FR 30745	5/29/2014	Inseason Action to Adjust the General Category (Commercial) Atlantic Bluefin Tuna Retention Limit for June-August 2014
79 FR 36728	6/30/2014	Notice of Receipt of Pure Seine EFP Application
79 FR 38255	7/7/2014	Final Rule for the 2014 Bluefin Tuna Quota Specifications
79 FR 47381	8/13/2014	Inseason Action to Transfer Atlantic Bluefin Quota from Reserve Category

Federal Register Cite	Date	Rule or Notice
		to the Harpoon Category
79 FR 50854	8/26/2014	Inseason Action to Maintain the Four-Fish General Category Daily Retention Limit for September-December 2014
79 FR 71510	12/2/2014	Final Rule for Amendment 7 to the 2006 Consolidated HMS FMP
79 FR 74652	12/16/2014	Notice of Public Webinars for Amendment 7 to the 2006 Consolidated HMS FMP
		Sharks
79 FR 12155	3/4/2014	Public Meeting for Selected Participants of the 2014 Shark Research Fishery
79 FR 28849	5/20/2014	NMFS Closes the Gulf of Mexico Aggregated LCS and Hammerhead Shark Management Groups
79 FR 30064	5/27/2014	Notice of Intent to Prepare an EA for Amendment 6 to the 2006 Consolidated HMS FMP
79 FR 31227	6/2/2014	NMFS Closes the Gulf of Mexico Blacktip Shark Management Group
79 FR 33509	6/11/2014	12-Month Finding on Petitions to List the Great Hammerhead Sharks as Threatened or Endangered under the Endangered Species Act
79 FR 38214	7/3/2014	Final Rule to List Four Distinct Segments of Scalloped Hammerhead Shark as under the Endangered Species Act
79 FR 43267	7/25/2014	Closure of the Commercial Blacknose Shark and Non-Blacknose SCS Management Groups in the Atlantic Region
79 FR 46217	8/7/2014	Proposed Rule to Implement Amendment 9 to the 2006 Consolidated HMS FMP
79 FR 53024	9/5/2014	Stock Status Determination for Atlantic Sharpnose and Bonnethead Sharks
79 FR 53344	9/9/2014	Closure of the Commercial Blacknose Shark and Non-Blacknose SCS Management Groups in the Gulf of Mexico Region
79 FR 54252	9/11/2014	Proposed Rule to Establish the Quotas and Opening Dates for the 2015 Atlantic Shark Commercial Fishing Season
79 FR 56047	9/18/2014	Public Hearings for Draft Amendment 9 to the 2006 Consolidated HMS FMP
79 FR 64750	10/31/2014	Notice of Intent for Applications to the 2014 Shark Research Fishery
79 FR 71029	12/1/2014	Closure of the Commercial Aggregated LCS and Hammerhead Shark Management Groups in the Atlantic Region
79 FR 71331	12/2/2014	Final Rule to Establish the Quotas and Opening Dates for the 2015 Atlantic Shark Commercial Fishing Season
79 FR 73555	12/11/2014	Nominations for the Atlantic HMS SEDAR Pool
79 FR 74684	12/16/2014	12-Month Finding on Petition to List the Northwest Atlantic Population of the Dusky Shark Under the Endangered Species Act
79 FR 75068	12/17/2014	Closure of Commercial Fishing for Porbeagle Sharks in 2014 and for the Entire 2015 Fishing Season
		Swordfish and Billfishes
79 FR 27553	5/14/2014	Proposed Rule to Adjust the 2014 North and South Atlantic Swordfish Quotas
79 FR 49719	8/22/2014	Final Rule to Adjust the 2014 North and South Atlantic Swordfish Quotas

1.2 2014 Accomplishments of the International Commission for the Conservation of Atlantic Tunas

The International Commission for the Conservation of Atlantic Tunas (ICCAT) is an international regional fishery management organization (RFMO) with 49 members, including the United States. The 19th Special Meeting of ICCAT was held in Genoa, Italy November 10-17, 2014. The United States helped develop recommendations aimed at promoting the conservation, management, and rebuilding of Atlantic highly migratory fish stocks (e.g., tunas, billfish, sharks), including those important to U.S. fishermen. ICCAT made progress on a number of issues, including bluefin tuna, tropical tunas, compliance issues, and monitoring, control, and surveillance measures.

Western Atlantic Bluefin Tuna: In 2014, Recommendation 14-05 was adopted, which raised the western Atlantic bluefin tuna total allowable catch (TAC) from 1750 mt to 2,000 metric tons (mt) whole weight (ww) for 2015 and 2016. This TAC is within the range of scientific advice and allows for continued growth in spawning stock biomass under both the low and high recruitment scenarios for the entire period of the 20-year rebuilding program, which extends through 2018. Recommendation 14-05, maintains all Parties' current allocation shares, and includes provisions for the transfer of quota specifically to support cooperative research. It continues to call on Parties to contribute to ICCAT's Atlantic-wide Bluefin Tuna Research Program, including the enhancement of biological sampling. It also addresses other research needs and reflects collaborative work agreed to at the 2nd Meeting of the ICCAT Working Group of Fisheries Managers and Scientists in Support of the Western Bluefin Tuna Stock Assessment.

Eastern Atlantic and Mediterranean Bluefin Tuna: The Commission adopted Recommendation 14-04, amending the recovery plan for eastern Atlantic and Mediterranean bluefin tuna. Recommendation 14-04 increases the eastern Atlantic/Mediterranean TAC to 16,142 mt ww for 2015; 19,296 mt for 2016; and 23,155 mt for 2017. It maintains the allocation percentages from the prior Recommendation but also makes provisions (within the TACs) for some Parties that have requested allocations or the ability to carry forward unused quota. In addition, the extensive monitoring, control and surveillance measures that were originally adopted in the eastern Atlantic and Mediterranean bluefin tuna fisheries have been maintained with minor adjustments.

For both bluefin tuna stocks, the next full assessment is scheduled for 2016.

Sharks: The Commission adopted Recommendation 14-06 for Atlantic shortfin mako sharks. This recommendation requires parties to improve domestic data reporting systems and provide additional information to ICCAT about how they monitor catches and manage shortfin mako sharks. Recommendation 14-06 also requests the SCRS to conduct a stock assessment for shortfin mako sharks in 2016, if possible, and advise on appropriate management measures.

Monitoring, Control and Surveillance Measures: The Permanent Working Group (PWG) discussed the current progress of the functionality and implementation of the electronic bluefin tuna catch documentation program (eBCD). The system is still encountering significant technical difficulties based on the results of the coordinated international test that was completed in the fall 2014. In addition, the development of certain core system functionalities is pending

and these functionalities will not be available for testing until sometime in February 2015 at the soonest. Given these difficulties, the PWG recommended that the Commission make a determination pursuant to paragraph 5 of *Recommendation by ICCAT Supplementing the Recommendation for an Electronic Bluefin Tuna Catch Document (eBCD) System* (Recommendation 13-17) that the eBCD system cannot be ready for full implementation by the March 1, 2015, deadline and, therefore, that paper documents can continue to be used until the Commission determines the system can be fully implemented. ICCAT also adopted Recommendation 14-09 related to vessel monitoring systems (VMS) that requires Parties to reduce the VMS transmission rate from 6 hours to 4 hours and includes a review by SCRS in 2017 to determine the efficacy of this new measure.

1.3 State Regulations

Table 1.2 outlines the state regulations regarding HMS species as of November 3, 2014. While the HMS Management Division updates this table annually, persons interested in the current regulations for any state should contact that state directly.

Atlantic tunas (bluefin, bigeye, albacore, yellowfin, and skipjack tunas) are under federal jurisdiction from the outer boundary of the exclusive economic zone (EEZ) to the shoreline, including state waters, with the following three exceptions: state waters of Maine, Connecticut, and Mississippi (50 CFR 635.1(b)). Federal HMS regulations for Atlantic tunas apply in all other state waters of the Atlantic, Gulf of Mexico, and Caribbean. NMFS periodically reviews state tuna regulations for federal consistency as required under the Atlantic Tunas Convention Act (ATCA). Table 1.2 describes the state regulations as stated in available source material and makes no statement about the consistency of the specific, individual fishery regulations with Federal regulations.

The Atlantic States Marine Fisheries Commission (ASMFC) is composed of 15 member states along the Atlantic coast from Maine to Florida. The Gulf States Marine Fisheries Commission (GSMFC) is composed of five member states along the Gulf of Mexico from Florida to Texas. Through the Commissions, member states coordinate fisheries management measures to create consistent regulations and ensure stocks are protected across state boundaries. In August 2008, the ASMFC approved the Interstate FMP for Atlantic Coastal Sharks, effective as of January 1, 2010. This FMP was modified via Coastal Sharks Addendum I in September 2009 to allow for limited at-sea processing of smoothhound sharks and to remove recreational smoothhound shark possession limits. The ASMFC Intestate FMP was also modified via Addendum II in May 2013 to establish state shares of any future federal smoothhound shark quota and to allow smoothhound sharks to be fully processed at sea provided the fin to carcass ratio does not exceed 12 percent. In October 2013, the Interstate FMP was further modified to reorganize some shark complexes consistent with federal regulations. All management measures for coastal shark species in the FMP and Addendum I have been implemented by ASMFC members, unless they have been granted *de minimus* status (Maine, Massachusetts, and New Hampshire) or have equivalent conservation measures in place. Member states can implement more restrictive management measures. A state can request permission to implement an alternative to any mandatory compliance measure only if that state can show to the ASMFC Board's satisfaction that its alternative proposal will have the same conservation value as the

measure contained in this management plan or any addenda prepared under Adaptive Management.

Some Atlantic states have also adopted legislative bans on the possession and trade of shark fins, but not all are effective as of November 3, 2014. Currently, Delaware, Maryland, and New York have restrictions on shark fin possession, although some allow limited exemptions for certain species such as smoothhound sharks. Some states on the west coast of the United States, several U.S. territories, and Illinois have similar restrictions.

Table 1.2 State Rules and Regulations Pertaining to Atlantic HMS

State regulations are subject to change. Please contact the appropriate state personnel to ensure that the regulations listed below are current. X = Regulations in Effect; n = Regulation Repealed; FL = Fork Length; CL = Carcass Length; TL = Total Length; LJFL = Lower Jaw Fork Length; CFL = Curved Fork Length; DW = Dressed Weight; and SCS = Small Coastal Sharks; LCS = Large Coastal Sharks.

State	Species				Cite Reference	Regulatory Details	Contact Information
	Tunas	Swordfish	Billfishes	Sharks			
ME	X			X	Tuna - ME Rev. Stat. Ann. tit. 12, " 6001, 6502, and 6551 Sharks - Code ME R. 13-188 ' 50.01, 50.04 and 50.10	Tuna - Retention limit - 1 tuna/year – non-resident special tuna permit holder; Unlawful to fish for tuna with gear other than harpoon or hook and line or possess tuna taken in unlawful manner; retention limits and size limits mirror federal regulations. Sharks –Commercial harvest of sharks (except spiny dogfish) in state waters prohibited; finning prohibited; sharks harvested elsewhere but landed in Maine, or sharks landed recreationally, must be landed with head, fins, and tail naturally attached to the carcass; porbeagle cannot be landed commercially after federal quota closes. Dealers who purchase sharks must obtain a federal dealer permit. Recreational anglers must possess a federal HMS angling permits.	ME Department of Marine Resources Phone: (207) 624-6550 Fax: (207) 624-6024
NH			X	X	Billfish - FIS 603.13 Sharks - FIS 603.20	Billfish - Possession limit - 1 billfish/trip; Minimum size (LJFL) - Blue marlin – 99”; White marlin - 66”; Sailfish – 57”; May be taken by rod and reel only; Unlawful to sell billfish (blue or white marlin, sailfish, roundscale spearfish, and longbill spearfish), personal use only Sharks – See list for prohibited sharks (http://gencourt.state.nh.us/rules/state_agencies/fis600.html) – no take, landings, or possession of prohibited shark species; NH Wholesale Marine Species License and a Federal Dealer permit required for all dealers purchasing listed sharks; Porbeagle sharks can only be taken by recreational fishing from state waters; Head, fins and tail must remain attached to all shark species through landing	NH Fish and Game Douglas Grout Phone: (603) 868-1095 Fax: (603) 868-3305

State	Species				Cite Reference	Regulatory Details	Contact Information
	Tunas	Swordfish	Billfishes	Sharks			
MA	X			X	Bluefin Tuna - 322 CMR 6.04 Sharks – 322 CMR 6.37	Bluefin Tuna - References ATCA and federal regulations; Bluefin tuna may be retained if caught in a trap as incidental catch; Fishing for bluefin tuna by means of any net is prohibited prior to September 1 of the year; Fishing for tuna by means of purse seine is allowed in state waters if the vessel is compliant with the registration requirements set forth in 322 CMR 6.04(4); Purse seining for bluefin tuna is prohibited in Cape Cod Bay. Sharks – ASMFC Coastal Shark Plan (no shark species may be landed with tails or fins removed 322 CMR 6.37(3)(d)) All MA commercial and recreational fishing regulations are available online at: http://www.mass.gov/dfwele/dmf/commercialfishing/cmr_index.htm	MA Division of Marine Fisheries Jared Silva Phone: (617) 626-1534 Fax: (617) 626-1509
RI				X	Sharks - RIMFC Regulations part VII 7.24	Sharks – ASMFC Coastal Shark Plan RI commercial fishing license and/or landing permit required to harvest and/or land HMS species All RI commercial and recreational marine fisheries regulations are available online at: http://www.dem.ri.gov/pubs/regs/regs/fishwild/rimftoc.htm RIMFC Regulations part VII 7.24 are available online at: http://www.dem.ri.gov/pubs/regs/regs/fishwild/rimf7.pdf	RI Dept of Environment Management, Div of Fish and Wildlife Eric Schneider Phone: (401) 423-1933

State	Species				Cite Reference	Regulatory Details	Contact Information
	Tunas	Swordfish	Billfishes	Sharks			
CT				X	Sharks – Regulations of Connecticut State Agencies § 26-159a-1; Connecticut General Statutes §26-142a(d) Declarations: 10-03, 10-05, 10-07	Sharks – Prohibited species same as federal regulations; No commercial fishing for large coastal sharks; No commercial small coastal shark fishing until further notice	CT Department of Environmental Protection David Simpson Phone: (860) 434-6043 Fax: (860) 434-6150
NY			X	X	Billfish - NY Environmental Conservation ' 13-0339 (5) Sharks - NY Environmental Conservation ' 13-0338; State of New York Codes, Rules and Regulations (Section 40.7)	Billfish - Blue marlin, white marlin, sailfish, and longbill spearfish shall not be bought, sold or offered for sale; Striped marlin, black marlin, shortbill spearfish shall not be bought, sold or offered for sale unless tagged and identified prior to entry into the state Sharks – ASMFC Coastal Shark Plan	NY Department of Environmental Conservation Stephen W. Heins Phone: (631) 444-0435 Fax: (631) 444-0449
NJ				X	Sharks - NJ Administrative Code, Title 7. Department of Environmental Protection, NJAC 7:25-18.1 and 7:25-18.12(d)	Sharks – ASMFC Coastal Shark Plan	NJ Fish and Wildlife Russ Babb Phone: (609)748-2020 Fax: (609) 748-2032

State	Species				Cite Reference	Regulatory Details	Contact Information
	Tunas	Swordfish	Billfishes	Sharks			
DE			X	X	Billfish - DE Code Ann. tit. 7, ' 1310 Sharks - DE Code Regulations 3541	Billfish - Prohibition on sale of Atlantic sailfish and blue/white/striped marlin Sharks – ASMFC Coastal Shark Plan	DE Division of Fish and Wildlife John Clark Phone: (302) 739-9914
MD	X	X	X	X	Bluefin tuna - Code of Maryland Regulations 08.02.12.03 and 08.02.05.23 Swordfish - Code of Maryland Regulations 08.02.12.03 and 08.02.05.27 Billfish - Code of Maryland Regulations 08.02.12.03 and 08.02.05.26 Sharks - Code of Maryland Regulations 08.02.12.03 and 08.02.22.01-.04	Bluefin tuna - Federal regulations used to control size and seasons and recreational catch required to be tagged Swordfish - Federal regulations used to control size and seasons and recreational catch required to be tagged Billfish (blue/white marlin and sailfish) - Federal regulations control size and seasons and recreational catch required to be tagged Sharks – Recreational catch required to be tagged; ASMFC Coastal Shark Plan; all recreationally harvested sharks must have heads, tails, and fins attached naturally to the carcass through landing; all commercially harvested sharks other than smoothhounds must have tails and fins attached naturally to carcass through landing; smoothhound sharks harvested commercially may have dorsal, pectoral and caudal fins removed (caudal fins may not exceed 4% of total dressed weight of smoothhound shark carcasses on board; dorsal and pectoral fins may not exceed 8% of total dressed weight of smoothhound shark carcasses on board)	MD Department of Natural Resources Gina Hunt Phone: (410) 260-8326

State	Species				Cite Reference	Regulatory Details	Contact Information
	Tunas	Swordfish	Billfishes	Sharks			
VA			X	X	Billfish - 4 VA Administrative Code 20-350-10 Sharks - 4 VA Administrative Code 20-490-10	Billfish - Prohibition on sale of billfish Sharks – ASMFC Coastal Shark Plan	VA Marine Resources Commission Robert O'Reilly Phone: (757) 247-2247 Fax: (757) 247-2002
NC	X		X	X	Tuna - NC Administrative Code tit. 15A 03M.0520 Billfish -NC Administrative Code tit. 15A, r.3M.0507 and 15A 03M.0507 Sharks -NC Administrative Code tit. 15A, NCAC, 03M .0512 Compliance with Fishery Management Plans	Tuna – Commercial and recreational minimum size: yellowfin tuna – 27” CFL, bigeye tuna - 27” CFL, bluefin tuna – 73” CFL; Recreational bag limit: 3 yellowfin tuna/day Billfish - Recreational possession limit - 1 blue or white marlin/vessel/trip; 1 sailfish/person/day; Minimum size - blue marlin - 99", white marlin - 66", sailfish - 63"; Unlawful to sell or offer for sale blue or white marlin and sailfish Sharks - Director may impose restrictions for size, seasons, areas, quantity, etc. via proclamation; ASMFC Coastal Shark Plan; additionally: longline in the shark fishery shall not exceed 500 yd or have more than 50 hooks	NC Division of Marine Fisheries Randy Gregory Phone: (252) 726-7021 Fax: (252) 726-0254

State	Species				Cite Reference	Regulatory Details	Contact Information
	Tunas	Swordfish	Billfishes	Sharks			
SC	X	X	X	X	Tuna/Swordfish - SC Code Ann. ' 50-5-2725 and 2730 Billfish - SC Code Ann. ' 50-5-1700, 1705, 2725 and 2730 ; 50-1-30 (7) Sharks - SC Code Ann. ' 50-5-2725, 2730	Tuna/Swordfish – Defer to federal regulations Billfish – Defer to federal regulations; Unlawful to sell billfish; Hook and line gear only; Unlawful to possess while transporting gillnets, seines, or other commercial gear Sharks – Defer to federal regulations; Gillnets may not be used in the shark fishery in state waters; State permit required for shark fishing in state waters	SC Department of Natural Resources Wallace Jenkins Phone: (843) 953-9835 Fax: (843) 953-9386
GA			X	X	Gear Restrictions/Prohibitions - GA Code Ann. ' 27-4-7; Billfish - GA Code Ann. ' 27-4-130.2; GA Comp. R. & Regs. ' 391-2-4-.04 Sharks - GA Code Ann. ' 27-4-130.1; GA Comp. R. & Regs. ' 391-2-4-.04	Gear Restrictions/Prohibitions - Use of gillnets and longlines is prohibited in state waters Billfish - Possession prohibited in state waters, except for catch and release Sharks – Commercial/Recreational: 1/person for sharks from the Small Shark Composite (bonnethead, Atlantic sharpnose, and spiny dogfish), min size 30” FL. All other sharks - 1 shark/person or boat, whichever is less, min size 54” FL. Hammerheads (great, scalloped and smooth)-1/person, minimum size – 78” FL. Prohibited Species: same as federal, plus silky sharks; All species must be landed head and fins intact; Sharks may not be landed in Georgia if harvested using gillnets; ASMFC Coastal Shark Plan	GA Department of Natural Resources Carolyn Belcher Phone: (912) 264-7218 Fax: (912) 262-3143

State	Species				Cite Reference	Regulatory Details	Contact Information
	Tunas	Swordfish	Billfishes	Sharks			
FL		X	X	X	Sharks - FL Administrative Code 68B-44 Billfish and Spearfish - FL Administrative Code 68B-33 Swordfish – FL Administrative Code 68B-58	Billfish – Longbill and Mediterranean– harvest/possession/landing/purchase/sale/exchange prohibited Blue/white marlin, roundscale spearfish, and sailfish – Sale prohibited; Aggregate possession of 1 fish/person/day; Gear restriction (hook and line only); Minimum size limit (blue marlin – 99" LJFL; white marlin – 66" LJFL; roundscale spearfish – 66" LJFL; sailfish – 63" LJFL); Recreational catch reporting requirement (all non-tournament landings must be reported NOAA within 24 hours); Must land in whole condition (gutting allowed) Swordfish - Minimum size – 47" LJFL/25" CK; Authorized fishing gear for swordfish is hook and line in state waters, Recreational possession limit 1 fish/person/day or 4 fish/vessel/day (with 4 or more persons onboard) on private boats, limit of 1 fish/paying customer/day up to 15 fish/vessel/day on for-hire vessels; Captain and crew on for-hire vessels have zero bag limit. Commercial harvest and sale allowed only with Florida saltwater products license, restricted species endorsement, and a federal commercial permit for swordfish, so federal regulations apply in state waters unless state regulations are more restrictive, Wholesale dealers purchasing swordfish must possess a federal Atlantic Swordfish Dealer permit; Recreational catch reporting requirement (all recreational landings must be reported to NMFS within 24 hours) Sharks – Commercial/recreational: min size – 54" except no min. size on blacknose, blacktip, bonnethead, smooth dogfish, finetooth, Atlantic sharpnose; Commercial/recreational possession limit – 1 shark/person/day, max; 2 sharks/vessel on any vessel with 2 or more persons on board; Allowable gear – hook and line only; State waters close to commercial harvest when adjacent federal waters close; Federal permit required for commercial harvest, so federal regulations apply in state waters unless state regulations are more restrictive; Finning, removing heads and tails, and filleting prohibited (gutting allowed); Prohibited species same as federal regulations plus prohibition on harvest of spiny dogfish, lemon, sandbar, silky, tiger, great hammerhead, smooth hammerhead, and scalloped hammerhead sharks, direct and continuous transit through state waters to place of landing for spiny dogfish, lemon, sandbar, silky, tiger, great hammerhead, smooth hammerhead, and scalloped hammerhead sharks legally caught in federal waters is allowed.	FL Fish and Wildlife Conservation Commission Martha Bademan Phone: (850) 487-0554 Fax: (850) 487-4847

State	Species				Cite Reference	Regulatory Details	Contact Information
	Tunas	Swordfish	Billfishes	Sharks			
AL	X	X	X	X	Tunas/Swordfish/Billfish/Sharks – AL Administrative Code r.220-3-.30 Sharks - AL Administrative Code r.220-3-.30, r.220-3-.37, and r.220-2-.77	All HMS - Reference to federal landing form regulations. Any vessel or individual required to possess a federal permit to harvest or retain marine aquatic species must possess such permit to possess or land such marine aquatic species in Alabama Tuna - Recreational and commercial fishermen must have a federal permit to fish for tunas; Yellowfin and bigeye – 27" CFL min size Sharks – Recreational: bag limit – 1 sharpnose/person/day and 1 bonnethead/person/day; no min size; great hammerhead, smooth hammerhead, scalloped hammerhead 1/person/day - 78" FL; all other sharks – 1/person/day; min size – 54" FL or 30" dressed; Commercial - no size limit and no possession limit on any non-prohibited species. Restrictions of chumming and shore-based angling if creating unsafe bathing conditions; Prohibited species: Atlantic angel, basking, bigeye sand tiger, bigeye sixgill, bigeye thresher, bignose, Caribbean reef, Caribbean sharpnose, dusky, Galapagos, largetooth sawfish, longfin mako, narrowtooth, night, sandtiger, smalltooth sawfish, smalltail, sevengill, sixgill, spotted eagle ray, whale, white sandbar (unless fisherman possess a federal shark research fishery permit), silky (unless fisherman possess a Federal Atlantic shark fisheries permit). Commercial-state waters close, by species, when federal season closes; no shark fishing on weekends, Memorial Day, Independence Day, or Labor Day; Regardless of open or closed season, gillnet fishermen targeting other fish may retain sharks with a dressed weight not exceeding 10% of total catch. www.outdooralabama.com	AL Department of Conservation and Natural Resources, Marine Resources Division MAJ Scott Bannon Phone: (251) 861-2882

State	Species				Cite Reference	Regulatory Details	Contact Information
	Tunas	Swordfish	Billfishes	Sharks			
LA	X	X	X	X	Tunas - LA Administrative Code Title 76, Pt. VII, Ch. 3, § 361 Swordfish/Billfish - LA Administrative Code Title76, Pt. VII, Ch. 3, § 355 Sharks - LA Administrative Code Title 76, Pt. VII, Ch. 3, § 357	Tunas - Recreational and commercial minimum size for yellowfin and bigeye is 27" CFL; Recreational bag limits – 3 yellowfin/person. Recreational minimum size for bluefin tuna is 73" CFL and bag limit is 1/vessel/year. Recreational and commercial tuna fishing requires a federal permit. LA Admin Code States: "No person who, pursuant to state or federal law, is subject to the jurisdiction of this state shall violate any federal law, rule or regulation particularly those rules and regulations enacted pursuant to the Magnuson-Stevens Fishery Conservation Act and published in the Code of Federal Regulations as amended Title 50 and 15, for tunas while fishing in the EEZ, or possess, purchase, sell, barter, trade, or exchange tunas within or without the territorial boundaries of Louisiana in violation of any state or federal law, rule or regulation particularly those rules and regulations enacted pursuant to the Magnuson-Stevens Fishery Conservation Act and published in the Code of Federal Regulations as amended Title 50 and 15 law." Billfish/Swordfish - Minimum size: blue marlin (99" LJFL), white marlin (66" LJFL), sailfish (63" LJFL), swordfish (29" carcass length or 33 lb dw, 47" LJFL if not dressed); Recreational creel limit - 5 swordfish/vessel/trip; Federal swordfish permit required for commercial swordfish fishing; Dealers must have federal permit to buy swordfish; state swordfish fishery closes with federal fishery; reference to federal billfish regulations Sharks - Recreational: min size – 54" FL, except Atlantic sharpnose and bonnethead which have no size limit; bag limit - 1 sharpnose or bonnethead/person/day, all other sharks, except sandbar, silky and all prohibited sharks – 1 fish/person/day in aggregate including SCS, LCS, and pelagic sharks; Commercial: 33/vessel/day limit (36/vessel/day by mid-2013); no min size; Com & rec harvest prohibited: Apr 1 - Jun 30; Prohibited species: same as federal regulations; Fins must remain naturally attached to carcass though off-loading. Commercial shark fishing requires annual state shark permit. Owners/operators of vessels other than those taking sharks in compliance with state or federal commercial permits are restricted to no more than one shark from either the large coastal, small coastal, or pelagic group per vessel per trip within or without Louisiana waters.	LA Department of Wildlife and Fisheries Jason Adriance Phone: (504) 284-2032 or 225 765-2889 Fax: (504) 284-5263 or (225) 765-2489

State	Species				Cite Reference	Regulatory Details	Contact Information
	Tunas	Swordfish	Billfishes	Sharks			
MS	X		X	X	Tunas/Billfish/Sharks - MS Code Title-22 part 7	Tunas – No directed bluefin tuna fishing; only recreational anglers can retain incidentally-caught bluefin tuna up to 1/boat/week; Recreational and commercial min size for yellowfin and bigeye is 27" CFL; Recreational retention limit for yellowfin is 3/person (possession limit) Billfish – Unlawful to sell blue and white marlin and sailfish without proper federal documentation; Recreational minimum size: blue marlin 99" LJFL; white marlin 66" LJFL; sailfish 63" LJFL; No possession for longbill spear fish; No limit for recreational take Sharks – Recreational min size: LCS/Pelagics 37" TL; SCS 25" TL; possession limit: LCS/Pelagics 1/person up to 3/vessel; SCS 4/person; Commercial and prohibited species same as federal regulations; Prohibition on finning	MS Department of Marine Resources Kerwin Cuevas Phone: (228) 374-5000
TX		X	X	X	Billfish/Swordfish/Sharks - TX Administrative Code Title 31, Part 2, Parks and Wildlife Code Title 5, Parks and Wildlife Proclamations 57.971, 57.973 and 57.981	Blue marlin, white marlin, sailfish, sharks, longbill spearfish, and broadbill swordfish are gamefish and may only be taken with pole and line (including rod and reel); Blue marlin, white marlin, sailfish, and longbill spearfish may not be sold for any purpose Billfish - Bag limit none; min size blue marlin – 131" TL; white marlin – 86" TL; sailfish – 84" TL Sharks - Commercial/recreational: bag limit - 1 shark/person/day; Commercial/recreational possession limit is twice the daily bag limit (i.e., 2 sharks/person/day); min size 24" TL for Atlantic sharpnose, blacktip, and bonnethead sharks and 64" TL for all other lawful sharks. Prohibited species: same as federal regulations	TX Parks & Wildlife Department Mark Lingo Phone: (956) 350-4490 Fax: (956) 350-3470

State	Species				Cite Reference	Regulatory Details	Contact Information
	Tunas	Swordfish	Billfishes	Sharks			
Puerto Rico	X	X	X	X	Regulation #7949 Article 13 – Commercial Fishing Limits Article 18 – Recreational Fishing Limits	Illegal to sell, offer for sale, or traffic in any billfish or marlin, either whole or processed, captured in jurisdictional waters of Puerto Rico. Swordfish or billfish, tuna, and shark are covered under the federal Atlantic HMS regulations (50 CFR, Part 635), which also apply in territorial waters; Fishers who capture these species are required to comply with said regulation; billfish captured incidentally with long line must be released by cutting the line close to the fishhook, avoiding the removal of the fish from the water; in the case of tuna and swordfish, fishers shall obtain a permit according to the requirements of the federal government; Year-round closed season on nurse sharks. http://www.drna.gobierno.pr/biblioteca/reglamentos_folder/Reglamento%20de%20Pesca%20de%20Puerto%20Rico%20-%207949	Puerto Rico Department of Natural and Environmental Resources Craig Lilyestrom Phone: (787) 772-2022
U.S. Virgin Islands	X	X	X	X	V.I.C., Title 12, Chapter 9A.	Federal regulations and federal permit requirements apply in territorial waters. http://caribbeanfmc.com/pdfs/booklet%20usvi%20Commercial%202009.pdf	6291 Estate Nazareth St. Thomas, VI 00802 Phone: (340) 775-6762 45 Mars Hill Complex Frederiksted, St. Croix, VI 00840 Phone: (340) 773-1082

2. STATUS OF THE STOCKS

The thresholds used to determine the status of Atlantic HMS are presented in Figure 2.1. These thresholds are fully described in Chapter 3 of the 1999 Tunas, Swordfish, and Shark FMP (1999 FMP) and in Amendment 1 to the Billfish FMP. These thresholds were carried over in full in the 2006 Consolidated HMS FMP and are based upon the thresholds described in a paper providing the technical guidance for implementing NS 1 of the Magnuson-Stevens Act (Restrepo et al., 1998). These types of figures are often used by stock assessment scientists to summarize the results of various stock assessment models. Generally, if the model results are in the white portion of the figure, the stock may have a status of "not overfished" and "overfishing is not occurring." Similarly, if the model results are in the gray portions of the figure, the stock may have a status of "overfished," "overfishing is occurring," or both.

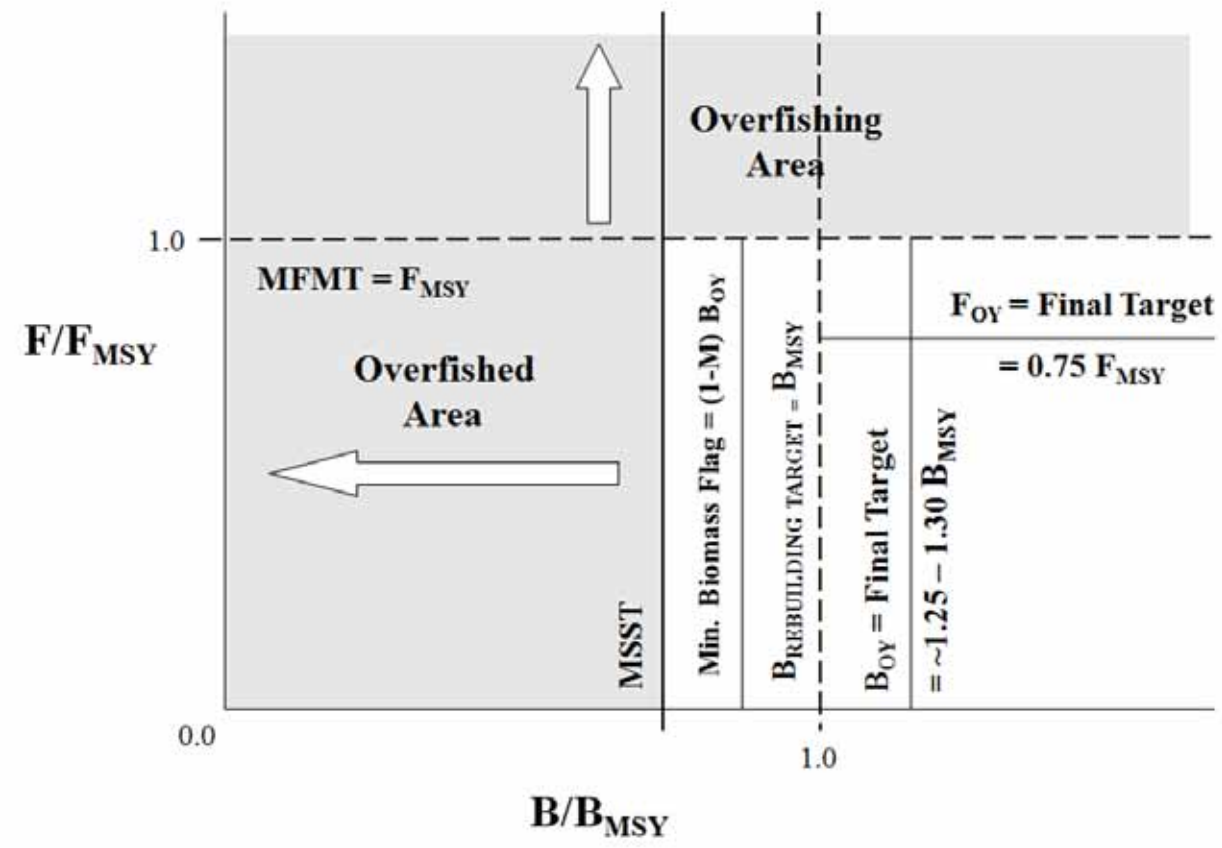

Figure 2.1 Illustration of the Status Determination Criteria and Rebuilding Terms

In summary, a species is considered "overfished" when the current biomass (B) is less than the minimum stock size threshold ($B < B_{MSST}$). The minimum stock size threshold (MSST) is determined based on the natural mortality of the stock and the biomass at maximum sustainable yield (B_{MSY}). Maximum sustainable yield (MSY) is the maximum long-term average yield that can be produced by a stock on a continuing basis. The biomass can be lower than B_{MSY}, and the stock not be declared overfished as long as the biomass is above B_{MSST}. If a species is declared overfished, action to rebuild the stock is required by law. A species is

considered rebuilt when B is greater than B_{MSY}. It is important to note that other bodies, such as ICCAT, use different thresholds for stock status determination. For instance, the ICCAT Convention defines an overfished status as $B_{year}/B_{MSY} < 1.0$, not $B_{year}/B_{MSY} <$ MSST.

"Overfishing may be occurring" on a species if the current fishing mortality (F) is greater than the fishing mortality at MSY (F_{MSY}) ($F > F_{MSY}$). In the case of F, the maximum fishing mortality threshold is F_{MSY}. Thus, if F exceeds F_{MSY}, the stock is experiencing overfishing. If overfishing is occurring, action to end overfishing is required by law.

A species is considered healthy when B is greater than or equal to the biomass at optimum yield (B_{OY}) and F is less than or equal to the fishing mortality at optimum yield (F_{OY}).

The domestic thresholds used to calculate the domestic status of Atlantic HMS, as described in the 1999 FMP and Amendment 1 to the Billfish FMP, are:

- Maximum Fishing Mortality Threshold (MFMT) = $F_{limit} = F_{MSY}$;
- Overfishing is occurring when $F_{year} > F_{MSY}$;
- Minimum Stock Size Threshold (MSST) = $B_{limit} = (1\text{-}M)B_{MSY}$ when $M < 0.5$; MSST = $0.5B_{MSY}$ when $M \geq 0.5$ (for billfish, the specific MSST values are: blue marlin = $0.9B_{MSY}$; white marlin = $0.85B_{MSY}$; west Atlantic sailfish = $0.75B_{MSY}$); M = natural mortality. In many cases an average M across age classes or sensitivity runs from a stock assessment model is used to calculate MSST. Overfished when $B_{year}/B_{MSY} <$ MSST;
- Biomass target during rebuilding = B_{MSY};
- Fishing mortality during rebuilding < F_{MSY};
- Fishing mortality for healthy stocks = $0.75F_{MSY}$;
- Biomass for healthy stocks = $B_{OY} \approx 1.25$ to $1.30B_{MSY}$;
- Minimum biomass flag = $(1\text{-}M)B_{OY}$; and
- Level of certainty of *at least* 50 percent but depends on species and circumstances.
- For some stocks (e.g., bluefin tuna, albacore), spawning stock biomass (SSB) is used as a proxy for biomass.
- For sharks, in some cases, spawning stock fecundity (SSF) or number of fish (N) can be used as a proxy for biomass since biomass does not influence pup production in sharks. SSF is the sum of the number of mature sharks at age multiplied by pup-production at age.

Table 2.1 and Table 2.2 present the stock assessment information and the current stock status of Atlantic HMS as of November 2014 under both the domestic and international thresholds (e.g., whether a species is considered to be overfished on a domestic, and when appropriate, international level). In some cases, these statuses are preliminary as NMFS is still reviewing the most recent stock assessment results. NMFS updates all U.S. fisheries stock statuses each quarter and provides a Status of U.S. Fisheries Report to Congress on an annual

basis. The stock statuses provided in that report are final. The status of the stock reports are available at: http://www.nmfs.noaa.gov/sfa/fisheries_eco/status_of_fisheries/.

With the exception of many Atlantic sharks stocks, stock assessments for Atlantic HMS are conducted by ICCAT's SCRS. In 2014, the SCRS completed stock assessments for Atlantic bluefin tuna and skipjack tuna. All SCRS final stock assessment reports are available at http://www.iccat.int/en/assess.htm.

Atlantic shark stock assessments for large coastal, small coastal, and smoothhound sharks are generally completed by the Southeast Data, Assessment, and Review (SEDAR) process. SEDAR assessments for bonnethead and sharpnose sharks were conducted in 2013 and the preliminary stock status results were provided in the 2013 SAFE report. Since that time, the stock statuses for these species have been finalized; the updated stock statuses are provided in the following tables. In 2014, SEDAR began the process to assess smoothhound sharks. That assessment is expected to be complete in early 2015 and any results would be included in next year's SAFE report. As completed, documents related to the smoothhound stock assessment are provided at http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=39.

In some cases, NMFS looks to available resources, including peer reviewed literature, for external assessments that, if deemed appropriate, could be used for domestic management purposes. NMFS followed this process in determining the stock status of scalloped hammerhead sharks based on an assessment for scalloped hammerhead sharks that was completed by Hayes et al. (2009).

Table 2.1 Atlantic HMS Stock Status Summaries (Domestic and International): Overfished (and Years to Rebuild) and Not Overfished

Species	Current Relative Biomass Level	B_{MSY}	International Threshold	Domestic Minimum Stock Size Threshold	International Stock Status	Domestic Stock Status	Years to Rebuild	Rebuilding Start Date (Rebuilding End Date)	Date of Most Recent Assessment
West Atlantic bluefin tuna	SSB_{2013}/SSB_{MSY}* = 2.25 (1.92 - 2.68) (low recruitment) SSB_{2013}/SSB_{MSY}* = 0.48 (0.35 - 0.72) (high recruitment)	SSB_{MSY} = 13,226 mt (low recruitment; 12,969-13,645 mt) SSB_{MSY} = 63,102 mt (high recruitment; 50,096-72,921 mt)	B_{MSY}	0.86 SSB_{MSY} (11,374 mt; low recruitment) (54,268 mt; high recruitment)	Low recruitment scenario: Not overfished High recruitment scenario: Overfished	Low recruitment scenario: Not overfished* High recruitment scenario: Overfished*	20	5/1/1999 (2019)	2014
Atlantic bigeye tuna	B_{2009}/B_{MSY} = 1.01 (0.72 - 1.34)	422,630 mt	$_{MSY}$	0.6 B_{MSY} (253,578 mt)	Not overfished	Not overfished (Rebuilding)	Not available†††	1/1/1999	2010
Atlantic yellowfin tuna	B_{2010}/B_{MSY} = 0.85 (0.61 - 1.12)	*Unknown*†	B_{MSY}	0.5 B_{MSY} (age 2+)	Overfished	Not overfished			2011
North Atlantic albacore tuna	SSB_{2011}/SSB_{MSY} = 0.94 (0.74 - 1.14)	SSB_{MSY} = 81,110 mt	B_{MSY}	0.7 B_{MSY} (56,777 mt; based on SSB_{MSY})	Overfished	Not overfished (Rebuilding)	10	1/1/2010 (2020)	2013
West Atlantic skipjack tuna	B_{2013}/B_{MSY}: Probably close to 1.3	30,755 mt	B_{MSY}	*Unknown*	Not overfished	Not overfished			2014
North Atlantic swordfish	B_{2011}/B_{MSY} = 1.14 (1.05 - 1.24)	65,060 mt	B_{MSY}	0.8 B_{MSY}; (52,048 mt)	Not overfished	Not overfished			2013
South Atlantic swordfish	B_{2011}/B_{MSY} = *Unknown but likely above 1*	*Unknown*	$_{MSY}$	0.8 B_{MSY} *(Unknown)*	Not overfished	Not overfished			2013
Blue marlin	B_{2009}/B_{MSY} = 0.67 (0.53 - 0.81)	25,411 mt (SSB_{MSY})	B_{MSY}	0.9 B_{MSY} (22,870 mt; based on SSB_{MSY})	Overfished	Overfished	Not available†††	6/1/2001	2011
White marlin (and roundscale spearfish)	B_{2010}/B_{MSY} = 0.5 (0.42-0.60)	29,240 mt (27,260 - 30,720 mt)	B_{MSY}	0.85 B_{MSY} (23,171-26,112 mt)	Overfished	Overfished	Not available†††	6/1/2001	2012

Species	Current Relative Biomass Level	B_{MSY}	International Threshold	Domestic Minimum Stock Size Threshold	International Stock Status	Domestic Stock Status	Years to Rebuild	Rebuilding Start Date (Rebuilding End Date)	Date of Most Recent Assessment
West Atlantic sailfish	$B_{2007} < B_{MSY}$: Possibly	*Unknown*	MSY	0.78 B_{MSY}	*Possibly overfished*	Overfished	Not available†††	1/1/1999	2009
Longbill spearfish	*Unknown*	*Unknown*	B_{MSY}	*Unknown*	*Unknown*	*Unknown*			*1997*
Northwest Atlantic porbeagle sharks	B_{2008}/B_{MSY} = 0.43 – 0.65	B 29,382 - 40,676 mt	B_{MSY}	(1-M)B_{MSY}**	Overfished	Overfished	100	7/24/2008 (2108)	2009
North Atlantic blue sharks	B_{2007}/B_{MSY} = 1.87 - 2.74	*Unknown*†	B_{MSY}	(1-M)B_{MSY}	Not overfished	Not overfished			2008
North Atlantic shortfin mako sharks	B_{2010}/B_{MSY} = 1.15 - 2.04	183,612 mt - 863,655 mt††	B_{MSY}	(1-M)B_{MSY}**	Not overfished	Not overfished			2012
Sandbar sharks	SSF_{2009}/SSF_{MSY} = 0.51 – 0.72	SSF_{MSY} = 349,330 - 1,377,800 (numbers of sharks)	*NA*	301,821 – 1,190,419 (based on SSF_{MSY})	*NA*	Overfished	66	1/1/2005 (2070)	2010
Gulf of Mexico blacktip sharks	SSF_{2010}/SSF_{MSY} = 2.00-2.66	SSF_{MSY} = 1,570,000 - 6,440,000 (numbers of sharks)	*NA*	1,327,697 - 5,446,093 (1-M)SSF_{MSY}	*NA*	Not overfished			2012
Atlantic blacktip sharks	*Unknown*	*Unknown*	*NA*	(1-M)B_{MSY}	*NA*	*Unknown*			2005/2006
Dusky sharks	SSB_{2009}/SSB_{MSY} = 0.41 - 0.50	*Unknown*†	*NA*	(1-M)SSB_{MSY}	*NA*	Overfished	100	7/24/2008 (2108)	2010
Scalloped hammerhead sharks	N_{2005}/N_{MSY} = 0.45	N_{MSY} = 62,000 (numbers of sharks)	*NA*	(1-M)N_{MSY}	*NA*	Overfished	10	7/3/2013 (2023)	2009
Atlantic Bonnethead sharks	*Unknown*	*Unknown*	*NA*	*Unknown*	*NA*	*Unknown*			2013

Species	Current Relative Biomass Level	B_{MSY}	International Threshold	Domestic Minimum Stock Size Threshold	International Stock Status	Domestic Stock Status	Years to Rebuild	Rebuilding Start Date (Rebuilding End Date)	Date of Most Recent Assessment
Gulf of Mexico Bonnethead sharks	*Unknown*	*Unknown*	*NA*	*Unknown*	*NA*	*Unknown*			2013
Atlantic sharpnose sharks – Atlantic stock	SSF_{2011} /SSF_{MSY} = 2.07	SSF_{MSY} = 4,860,000 (numbers of sharks)	*NA*	(1-M)SSF_{MSY}	*NA*	Not overfished			2013
Atlantic sharpnose sharks - Gulf of Mexico stock	SSF_{2011}/SSF_{MSY}= 1.01	SSF_{MSY} = 17,900,000	*NA*	(1-M)SSF_{MSY}	*NA*	Not overfished			2013
Atlantic blacknose sharks – Atlantic stock	SSF_{2009}/SSF_{MSY} = 0.43 – 0.64	SSF_{MSY} = 77,577 - 288,360 (numbers of sharks)	*NA*	62,294 - 231,553 (1-M)SSF_{MSY}	*NA*	Overfished	30	7/3/2013 (2043)	2010
Atlantic blacknose sharks – Gulf of Mexico stock	*Unknown*	*Unknown*	*NA*	(1-M)B_{MSY}	*NA*	*Unknown*			2010
Finetooth sharks	N_{2005}/N_{MSY} = 1.80	N_{MSY} = 3,200,000 (numbers of sharks)	*NA*	2,400,000 (1 - M)N_{MSY}	*NA*	Not overfished			2007

*Future stock productivity is based upon two hypotheses about future recruitment: a "high recruitment scenario" in which future recruitment has the potential to achieve levels that occurred in the early 1970s and a "low recruitment scenario" in which future recruitment is expected to remain near present levels. The SCRS, as stated in the stock assessment, has insufficient evidence to favor either scenario over the other and notes that both are plausible (but not extreme) lower and upper bounds on rebuilding potential. **M is unknown. †A value for B_{MSY} (or its proxy) was not provided in the stock assessment. ††Only the BSP model provided B_{MSY} values. The B_{MSY} range encompasses the16 scenarios run of the BSP model. †††There is insufficient information to estimate how many years it will take this stock to rebuild. Sources: SCRS, 2007, 2008, 2009a, 2009b, 2010, 2011, 2012a, 2012b, 2013, 2014; Gibson and Campana, 2005; Cortés et al., 2006; NMFS, 2006; NMFS, 2007; Hayes et al., 2009; SEDAR 2011a, 2011b, 2011c, 2011d, 2013a, 2013b.

Table 2.2 Atlantic HMS Stock Status Summaries (Domestic and International): Overfishing is Occurring and Overfishing is Not Occurring

Species	Current Relative Fishing Mortality Rate	Maximum Fishing Mortality Threshold	International Stock Status	Domestic Stock Status	Date of Most Recent Assessment
West Atlantic bluefin tuna	$F_{2010\text{-}2012}/F_{MSY}$*= 0.36 (0.28 - 0.43) (low recruitment) $F_{2010\text{-}2012}/F_{MSY}$*= 0.88 (0.64 - 1.08) (high recruitment)	F_{MSY} = 0.20 (0.17-0.24) (low recruitment) F_{MSY} = 0.08 (0.07-0.10) (high recruitment)	Low recruitment scenario: Overfishing is not occurring* High recruitment scenario: Overfishing is not occurring*	Low recruitment scenario: Overfishing is not occurring* High recruitment scenario: Overfishing is not occurring*	2014
Atlantic bigeye tuna	F_{2009}/F_{MSY} = 0.95 (0.65 - 1.55)	F_{MSY} = 0.214	Overfishing is not occurring	Overfishing not occurring	2010
Atlantic yellowfin tuna	F_{2010}/F_{MSY}= 0.87 (0.68 - 1.40)	F_{MSY} †	Overfishing is not occurring	Overfishing not occurring	2011
North Atlantic albacore tuna	F_{2011}/F_{MSY} = 0.72 (0.55 - 0.89)	F_{MSY} = 0.149	Overfishing is not occurring	Overfishing not occurring	2013
West Atlantic skipjack tuna	F_{2013}/F_{MSY}: probably close to 0.7	F_{MSY} = 1.02 (0.78 - 1.25)	*Overfishing not occurring*	*Overfishing not occurring*	2014
North Atlantic swordfish	F_{2011}/F_{MSY} = 0.82 (0.73 - 0.91)	F_{MSY} = 0.21 (0.17 - 0.26)	Overfishing is not occurring	Overfishing not occurring	
South Atlantic swordfish	F_{2011}/F_{MSY} = *Unknown but likely above 1*	*Unknown*	Overfishing is not occurring	Overfishing not occurring	
Blue marlin	F_{2009}/F_{MSY} = 1.63 (1.11-2.16)	F_{MSY} = 0.07	Overfishing is occurring	Overfishing is occurring	2011
White marlin (and roundscale spearfish)	F_{2010}/F_{MSY} = 0.99 (0.75-1.27; low productivity) F_{2010}/F_{MSY} = 0.72 (0.51-0.93; high productivity)	F_{MSY} = 0.03 (0.027-0.035)	Overfishing is not likely occurring	Overfishing is occurring	2012
West Atlantic sailfish	$F_{2007}>F_{MSY}$: Possibly	*Unknown*	Overfishing is possibly occurring	Overfishing is occurring	2009

Species	Current Relative Fishing Mortality Rate	Maximum Fishing Mortality Threshold	International Stock Status	Domestic Stock Status	Date of Most Recent Assessment
Longbill spearfish	*Unknown*	*Unknown*	*Unknown*	*Unknown*	*1997*
Northwest Atlantic porbeagle sharks	F_{2008}/F_{MSY} = 0.03 – 0.36	0.025 - 0.075	Overfishing is not occurring	Overfishing not occurring	2009
North Atlantic blue sharks	F_{2007}/F_{MSY} = 0.13 - 0.17	0.15	Overfishing is not occurring	Overfishing not occurring	2008
North Atlantic shortfin mako sharks	F_{2010}/F_{MSY} = 0.16 - 0.92	0.029 - 0.104††	Overfishing is not occurring	Overfishing not occurring	2012
Sandbar	F_{2009}/F_{MSY} = 0.29 - 2.62	0.004 - 0.06	Not assessed internationally	Overfishing not occurring	2010
Gulf of Mexico blacktip	F_{2010}/F_{MSY} = 0.05 – 0.27	0.021 - 0.163	Not assessed internationally	Overfishing not occurring	2012
Atlantic blacktip	*Unknown*	*Unknown*	Not assessed internationally	*Unknown*	2005/2006
Dusky sharks	F_{2009}/F_{MSY} = 1.39 - 4.35	0.01 - 0.05	Not assessed internationally	Overfishing is occurring	2010
Scalloped hammerhead sharks	F_{2005}/F_{MSY} =1.29	0.11	Not assessed internationally	Overfishing is occurring	2009
Bonnethead sharks – Atlantic stock	*Unknown*	*Unknown*	Not assessed internationally	*Unknown*	2013
Bonnethead sharks – Gulf of Mexico stock	*Unknown*	*Unknown*	Not assessed internationally	*Unknown*	2013
Atlantic sharpnose sharks – Atlantic stock	F_{2011}/F_{MSY} = 0.23	0.184	Not assessed internationally	Overfishing not occurring	2013
Atlantic sharpnose sharks - Gulf of Mexico stock	F_{2011}/F_{MSY} = 0.57	0.331	Not assessed internationally	Overfishing not occurring	2013
Atlantic blacknose sharks – Atlantic stock	F_{2009}/F_{MSY} = 3.26 – 22.53	0.01 - 0.15	Not assessed internationally	Overfishing is occurring	2010
Atlantic blacknose sharks – Gulf of Mexico stock	*Unknown*	*Unknown*	Not assessed internationally	*Unknown*	2010
Finetooth sharks	F_{2005}/F_{MSY} = 0.17	0.03	Not assessed internationally	Overfishing not occurring	2007

*Where F year refers to the geometric mean of the estimates for 2010-2012 (a proxy for recent F levels). †A value for F_{MSY} was not provided in the stock assessment. ††Both the BSP and catch-free model estimated F_{MSY}. The F_{MSY} range encompasses the lowest estimate of the 16 scenarios run of the BSP model and the highest estimate of the 10 scenarios run for the catch-free model. Sources: SCRS, 2007, 2008, 2009a, 2009b, 2010, 2011, 2012a, 2012b, 2013, 2014; Gibson and Campana, 2005; Cortés et al., 2006; NMFS, 2006; NMFS, 2007; Hayes et al., 2009; SEDAR 2011a, 2011b, 2011c, 2011d, 2013a, 2013b.

2.1 Stock Assessment Details

SCRS reports are available online at: http://www.iccat.int/en/meetings.asp All SEDAR reports are available online at: http://www.sefsc.noaa.gov/sedar/

Detailed stock assessments for the species in Table 2.1 and Table 2.2 are available at these websites:

Western Atlantic Bluefin Tuna

Assessed by ICCAT's SCRS in 2014:
http://www.iccat.int/Documents/Meetings/Docs/2014_BFT_ASSESS-ENG.pdf

Atlantic Bigeye Tuna

Assessed by ICCAT's SCRS in 2010:
http://www.iccat.int/Documents/Meetings/Docs/2010_BET_Assessment_REP_ENG.pdf

Atlantic Yellowfin Tuna

Assessed by ICCAT's SCRS in 2011:
http://www.iccat.int/Documents/Meetings/Docs/2011_YFT_ASSESS_REP.pdf

North Atlantic Albacore Tuna

Assessed by ICCAT's SCRS in 2013:
http://www.iccat.int/Documents/Meetings/Docs/2013_ALB_ASSESS_REP_ENG.pdf

West Atlantic Skipjack Tuna

Assessed by ICCAT's SCRS in 2014:
http://iccat.int/Documents/Meetings/Docs/2014_SKJ_ASSESS_ENG.pdf

http://www.iccat.int/Documents/SCRS/DetRep/DET-YFT-SKJ.pdf*North Atlantic Swordfish*

Assessed by ICCAT's SCRS in 2013:
http://www.iccat.int/Documents/Meetings/Docs/2013_SWO_ASSESS_REP_ENG.pdf

South Atlantic Swordfish

Assessed by ICCAT's SCRS in 2013:
http://www.iccat.int/Documents/Meetings/Docs/2013_SWO_ASSESS_REP_ENG.pdf

Blue Marlin

Assessed by ICCAT's SCRS in 2011:
http://www.iccat.int/Documents/Meetings/Docs/2011_BUM_ASSESS_ENG.pdf

White Marlin and Roundscale Spearfish

Assessed by ICCAT's SCRS in 2012:
http://www.iccat.int/Documents/Meetings/Docs/2012_WHM_ASSESS_ENG.pdf

West Atlantic Sailfish

Assessed by ICCAT's SCRS in 2009:
http://www.iccat.int/Documents/Meetings/Docs/2009_SAI_ASSESS_ENG.pdf

Longbill Spearfish

Longbill spearfish have not been individually assessed by ICCAT's SCRS due to the paucity of data. Some information can be found in the 2009 sailfish stock assessment: https://www.iccat.int/Documents/SCRS/DetRep/DET-SAI.pdf

Sandbar Sharks

Assessed in 2010/2011 through the SEDAR process:
http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=21

Gulf of Mexico Blacktip Sharks

Assessed in 2012 through the SEDAR process:
http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=29

Atlantic Blacktip Sharks

Assessed in 2006 through the SEDAR process:
http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=11

Dusky Sharks

Assessed in 2010/2011 through the SEDAR process:
http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=21

Bonnethead Sharks (Atlantic and Gulf of Mexico)

Assessed in 2013 through the SEDAR process:
http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=34

Atlantic Sharpnose Sharks (Atlantic and Gulf of Mexico)

Assessed in 2013 through the SEDAR process:
http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=34

Blacknose Sharks (Atlantic and Gulf of Mexico)

Assessed in 2010/2011 through the SEDAR process:
http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=21

Finetooth Sharks

Assessed in 2007 through the SEDAR process:
http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=13

Northwest Atlantic Porbeagle Sharks

Assessed by ICCAT's SCRS in 2009:
http://www.iccat.int/Documents/Meetings/Docs/2009_POR_ASSESS_ENG.pdf

North Atlantic Blue Sharks

Assessed by ICCAT's SCRS in 2008:
http://www.iccat.int/Documents/Meetings/Docs/2008_SHK_Report.pdf

North Atlantic Shortfin Mako Sharks

Assessed by ICCAT's SCRS in 2008:
http://www.iccat.int/Documents/Meetings/Docs/2012_SHK_ASS_ENG.pdf

Scalloped Hammerhead Sharks

Assessed in Hayes et al. (2009).

Smoothhound Sharks (Atlantic and Gulf of Mexico)

Currently being assessed through the SEDAR process:
http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=39

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SCRS. 2012a. Report of the standing committee on research and statistics. ICCAT SCRS. Madrid, Spain, October 1-5, 2012. 300 pp.

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SCRS. 2013. Report of the standing committee on research and statistics. ICCAT SCRS. Madrid, Spain, September 30-October 4, 2013. 344 pp.

SEDAR. 2011a. SEDAR 21 complete stock assessment report: HMS Atlantic blacknose shark. SEDAR, 4055 Faber Place Drive, Suite 201, North Charleston, SC 29405. 438 pp.

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SEDAR. 2013a. SEDAR 34 stock assessment report: HMS Atlantic Sharpnose Shark. SEDAR, 4055 Faber Place Drive, Suite 201, North Charleston, SC 29405. 298p.

SEDAR. 2013b. SEDAR 34 stock assessment report: HMS Bonnethead Shark. SEDAR, 4055 Faber Place Drive, Suite 201, North Charleston, SC 29405. 278p.

3. ESSENTIAL FISH HABITAT

3.1 Designations in the 2006 Consolidated Atlantic HMS FMP and its Amendments

The Magnuson-Stevens Act requires NMFS to identify and describe Essential Fish Habitat (EFH), minimize to the extent practicable the adverse effects of fishing on EFH, and identify other actions to encourage the conservation and enhancement of EFH. In 2009, NMFS completed the five year review and update of EFH for Atlantic HMS with the publishing of Amendment 1 to the 2006 Consolidated HMS FMP (June 12, 2009, 74 FR 288018). In Amendment 1, NMFS updated and revised existing identifications and descriptions of EFH for Atlantic HMS, designated a Habitat Area of Particular Concern (HAPC) for bluefin tuna in the Gulf of Mexico, and analyzed fishing and non-fishing impacts on EFH pursuant to Section 305(b) of the Magnuson-Stevens Act.

In 2010, NMFS added the smoothhound management group (consisting of *Mustelus canis* or smooth dogfish, *M. Norrisi* or Florida smoothhound, and more recently *M. sinusmexicanus* or Gulf smoothhound) to the species under Secretarial management in Amendment 3 to the 2006 Consolidated HMS FMP (June 1, 2010, 75 FR 30484). As a Magnuson-Stevens Act condition of adding a species to federal management, NMFS designated EFH for smoothhound using the same methodology employed in Amendment 1. Details, including a map of the final EFH, are available in Chapter 11 of the Amendment 3 FEIS.

On September 22, 2010, NMFS published an interpretive rule and final action (75 FR 57698) which, among other things, added roundscale spearfish (*Tetrapturus georgii*) to the definition of terms in the implementing regulations of the Magnuson-Stevens Act and the Atlantic HMS regulations, and defined EFH for roundscale spearfish. Roundscale spearfish and white marlin were managed as one species before this final action because roundscale spearfish were not recognized as a distinct species until recently. NMFS determined that the designation of roundscale spearfish EFH is the same as the designation of EFH for white marlin in Amendment 1 to the Consolidated HMS FMP.

On March 24, 2014, NMFS published in the Federal Register (79 FR 15959) an announcement of its next 5-year review of EFH for Atlantic HMS as required under the Magnuson-Stevens Act. The 5-year review is based on the best data available regarding Atlantic HMS and their habitats; therefore, NMFS requested submission of any such information on Atlantic HMS EFH that has become available since publication of Amendment 1 in 2009; Amendment 3 in 2010; and the interpretive rule and final action that published on September 22, 2010 that defined EFH for roundscale spearfish (*Tetrapturus georgii*). On April 3, 2014 the HMS Management Division presented the EFH 5-Year Review Plan to the HMS AP and public and requested new information to support the review. NMFS anticipates publishing the draft 5-Year Review in early 2015.

EFH maps are presented in hard copy in Amendments 1 and 3 and electronically on the internet via spatial files in Adobe (.pdf) format. The electronic maps and downloadable spatial EFH files for HMS and all federally managed species are available on the NMFS EFH Mapper at: http://www.habitat.noaa.gov/protection/efh/habitatmapper.html. A summary of the management history of HMS EFH is given in Table 3.1.

Table 3.1 Management History for HMS Essential Fish Habitat

FMP or Amendment	EFH and Species
1999 FMP for Atlantic Tunas, Swordfish, and Sharks	EFH first identified and described for Atlantic tunas, swordfish and sharks; HAPCs designated for sandbar sharks
1999 Amendment 1 to the 1988 Billfish FMP	EFH first identified and described for Atlantic billfishes
2003 Amendment 1 to the FMP for Atlantic Tunas, Swordfish and Sharks	EFH updated for five shark species (blacktip, sandbar, finetooth, dusky, and nurse sharks)
2006 Consolidated Atlantic HMS FMP	Comprehensive review of EFH for all HMS. EFH for all Atlantic HMS consolidated into one FMP; no changes to EFH descriptions or boundaries
2009 Amendment 1 to the 2006 Consolidated Atlantic HMS FMP	EFH updated for all federally managed Atlantic HMS. HAPC for bluefin tuna spawning area designated in the Gulf of Mexico
2010 Amendment 3 to the 2006 Consolidated Atlantic HMS FMP	EFH first defined for smoothhound sharks (smooth dogfish, Florida smoothhound, and Gulf smoothhound)
2010 White Marlin/ Roundscale Spearfish Interpretive Rule and Final Action	EFH first defined for roundscale spearfish (same as white marlin EFH designation in Amendment 1 to the 2006 Consolidated Atlantic HMS FMP)

3.2 Shark Nursery Grounds and Essential Fish Habitat Studies

NMFS continues to study EFH for HMS to refine our understanding of important habitat areas for HMS. The Magnuson-Stevens Act defines EFH as habitat necessary for spawning, breeding, feeding, and growth to maturity. The Magnuson-Stevens Act requires the identification of EFH in FMPs, and towards that end NMFS has funded two cooperative survey programs designed to further delineate shark nursery habitats in the Atlantic and Gulf of Mexico. The Cooperative Atlantic States Shark Pupping and Nursery (COASTSPAN) Survey, and the Cooperative Gulf of Mexico States Shark Pupping and Nursery (GULFSPAN) Survey are designed to assess the geographical and seasonal extent of shark nursery habitat, determine which shark species use these areas, and gauge the relative importance of these coastal habitats in order to provide information that can then be used in EFH determinations. Also, survey data collected are being incorporated into stock assessment models as abundance trends and life history parameters.

The COASTSPAN program, administered by the NMFS Northeast Fisheries Science Center's Narragansett, Rhode Island laboratory, has been collecting information on shark nursery areas along the U.S. Atlantic coast since 1998. It involves NMFS scientists along with state and university researchers in Massachusetts, Rhode Island, New York, New Jersey, Delaware, Virginia, North Carolina, South Carolina, Georgia, Florida and the U.S. Virgin Islands. NMFS initiated the GULFSPAN program in 2003 to expand upon the COASTSPAN Survey. This cooperative program, which is administered by the NMFS Southeast Science Center's Panama City, Florida laboratory, includes, in addition to NMFS scientists, the states of Florida, Alabama, and Mississippi. Following is a summary of the results from the 2013 COASTSPAN and GULFSPAN surveys (Bethea et al., 2013; McCandless pers. comm.).

Massachusetts

COASTSPAN sampling was conducted in Plymouth Bay in 2013. The shark catch consisted entirely of immature sand tiger sharks. This area continues to provide important summer nursery habitat for this prohibited species.

Rhode Island

Many young-of the-year sand tigers were caught off Point Judith, Rhode Island in June of 2013. These results continue to provide supporting evidence that Rhode Island waters are used at a minimum as transitional nursery habitat by this prohibited species during their migrations to northern waters.

New York

COASTSPAN sampling was conducted in Shinnecock Bay, New York in 2013. No sharks have been caught in this Bay during summer COASTSPAN sampling to date. Shinnecock Bay does not appear to provide sharks with nursery habitat or resources for any other life stage at this time. The COASTSPAN program previously provided sampling gear and tagging supplies for this survey, but the costs for running the survey are now covered by New York state COASTSPAN cooperators. Even though the Bay does not currently support shark populations, these cooperators will continue to provide data for as long as they run the survey to monitor Shinnecock Bay for potential changes in elasmobranch use with climate change.

New Jersey and Delaware (Delaware Bay)

COASTSPAN sampling encompassed the entire Bay from the mouth of the Delaware River to the mouth of Delaware Bay using a random stratified design based on depth and geographic location. Additional sampling was also conducted at historical fixed stations throughout the bay. Sandbar shark was the most abundant shark species caught in 2013, followed by smooth dogfish and sand tigers. One adult male Atlantic sharpnose shark was also caught in Delaware Bay in 2013. The majority of sandbar sharks caught were immature, with over a quarter of these as young-of the-year; the remaining sandbar sharks caught were considered mature females based on length and girth measurements. Smooth dogfish were represented nearly equally by juvenile and adult fish in 2013, with the overwhelming majority of immature and mature fish as young-of-the-year and females, respectively. The sand tigers caught in 2013 were primarily immature sharks, but nearly 30% were considered maturebased on clasper calcification for males and length and girth measurements for females.. Delaware Bay continues to provide important nursery habitat for sandbar sharks, smooth dogfish and sand tigers. The extensive use of the Bay by all life stages of sand tigers and smooth dogfish continues to highlight the seasonal importance of this essential shark habitat.

Virginia

COASTSPAN sampling encompassed the lower Chesapeake Bay and inlets along the Eastern Shore of Virginia using a random stratified design based on depth and geographic location. Additional sampling was also conducted at historical fixed stations near the mouth of Cheasapeake Bay and in coastal Virginia waters. Juvenile sandbar sharks dominated the catch in all areas sampled. Within the bay and inlets, the majority of sandbar sharks caught were young-

of-the-year. Other sharks caught within the inlets along the Eastern Shore of Virginia were two blacktip sharks, two Atlantic sharpnose sharks, and one smooth dogfish. Within Chesapeake Bay, six smooth dogfish were also caught. The second most abundant species caught in Virginia's coastal waters was the Atlantic sharpnose shark, consisting primarily of adult males. Other species caught in coastal waters, in order of abundance, were: spinner sharks, blacktip sharks, smooth dogfish, tiger sharks, dusky sharks, sand tigers, scalloped hammerheads, and one thresher shark. The majority of each species caught were immature, with the exception of the Atlantic sharpnose shark and the sand tiger. These findings highlight the importance of Virginia's coastal waters in providing nursery habitat for many coastal shark species. Virginia's estuarine waters continue to provide important nursery habitat for sandbar sharks.

North Carolina

Sampling occurred year round in inland (Pamlico Sound and Pungo, Neuse, New, and Cape Fear Rivers) and nearshore waters along the southern coast of North Carolina from New River Inlet to the South Carolina border. No sharks were captured in the Pamlico/Pungo and Neuse river systems in 2013. In the New and Cape Fear River systems, Atlantic sharpnose shark was the most abundant species, followed by bonnetheads and one blacktip shark was caught in 2013. In the Atlantic coastal waters, the catch was seasonally dominated by spiny dogfish and smooth dogfish in the cooler months. Atlantic sharpnose sharks dominated the catch in the warmer months, followed by bonnetheads. Blacktip sharks, blacknose sharks, scalloped hammerhead, finetooth sharks, and one tiger shark also occurred, but in much lower numbers.

South Carolina

COASTSPAN sampling took place in both nearshore and estuarine waters along the South Carolina coast including: Bulls Bay, Charleston Harbor, North Edisto, Port Royal Sound, St. Helena Sound, and Winyah Bay. Fourteen species of sharks were captured, the most abundant of which was Atlantic sharpnose. Other sharks captured, in order of abundance, were finetooth, bonnethead, blacktip, sandbar, scalloped hammerhead, blacknose, spinner, lemon, smooth dogfish, nurse, and tiger sharks, and one of each great hammerheadand sand tiger. The majority of each shark species captured were immature, with the exception of these species: Atlantic sharpnose, bonnethead, and blacknose sharks, and the great hammerhead. These findings continue to highlight the importance of South Carolina estuarine and nearshore waters as nursery habitat for many small and large coastal shark species and indicate the extensive use of these waters as habitat for several adult small coastal shark species.

Georgia

COASTSPAN sampling took place in both estuarine (St. Simon and St. Andrew sound systems) and nearshore waters along the Georgia coast from Sapelo Island to the Florida border. Of the twelve species of shark captured, Atlantic sharpnose was the most abundant. Other sharks in order of abundance were bonnethead, blacknose, sandbar, blacktip, tiger, scalloped hammerhead, finetooth, smooth dogfish, spinner, bull, and lemon sharks. Four species captured were also present as young-of-the-year in estuarine waters: sandbar, Atlantic sharpnose, and blacktip sharks, and one bull shark. In addition, Atlantic sharpnose, blacktip, sandbar, smooth dogfish, scalloped hammerhead, and tiger sharks were present as young-of-the-year in Georgia's nearshore waters. The majority of sharks captured were immature, highlighting the importance of these areas as potential nursery habitat for both small and large coastal shark species. In

addition, the majority of blacknose sharks and bonnetheads were mature, indicating these waters continue to provide important adult habitat for these small coastal shark species.

Atlantic Coast of Florida

COASTSPAN sampling occurred within 2 km of Florida's north Atlantic coast in and around the following locations: Cumberland Sound, Nassau Sound, Tolomato River, St. Johns River, St. Augustine Inlet, and Matanzas Inlet. Species represented in the 2013 catch included, in order of abundance: Atlantic sharpnose, blacktip, sandbar, bonnethead, blacknose, finetooth, scalloped hammerhead, smooth dogfish, bull, and nurse sharks and one spinner and one tiger shark. Nassau and Cumberland Sounds continue to provide nursery habitat for juvenile Atlantic sharpnose, scalloped hammerhead, and blacktip sharks. Nassau and Cumberland Sounds also provided nursery habiat for juvenile sandbar, finetooth, and bull sharks in 2013. Cumberland Sound and northern Florida's nearshore waters continue to provide habitat for adult female bonnetheads and mature blacknose sharks, respectively, as well. The multi-year seasonal use of the waters around Pine Island in the Tolomato River by neonate scalloped hammerheads continues to provide supporting evidence of an inshore nursery area for this species. Additionally, Cumberland and Nassau Sound provided winter nursery habitat for young-of-the-year smooth dogfish in 2013.

U.S. Virgin Islands

COASTSPAN sampling took place in the waters surrounding the Buck Island Reef National Monument off St. Croix in June 2013. This sampling is part of a two-year pilot study to determine the potential for a multi-species, multi-age look at habitat use within a national monument. Four species of shark were captured, Caribbean reef, nurse, lemon, and blacktip sharks. All sharks captured were immature, but none were present as young-of-the-year. Sampling in 2014 will take place during the month of May.

Panhandle of Florida

GULFSPAN sampling covered 4 areas in the Florida panhandle: St. Andrew Bay, Crooked Island Sound, St. Joseph Bay, and the Gulf of Mexico side of St. Vincent Island. In 2013, nine species of sharks and three species of rays were captured; the most abundant of which was Atlantic sharpnose shark. Others included bonnethead, blacktip, scalloped hammerhead and finetooth shark, as well as cownose stingrays. The majority of the sharks captured were immature; indicating that areas along the Florida panhandle should still be considered potentially important nursery areas for both large and small coastal shark species as well as hammerhead species. Benthic habitats sampled included shallow seagrass beds, sand and mud.

Big Bend of Florida

2013 GULFSPAN sampling by Florida State University covered more than 300 km of Florida's coastline from St. George Sound to Anclote Keys. Longlines and gillnets were used to collect data. Seventeen elasmobranch species were caught; the majority of which was Atlantic sharpnose, bonnethead, and blacktip sharks. Others included blacknose, lemon, tiger, great hammerhead, nurse, and Florida smoothound sharks, as well as Atlantic stingrays, and cownose and southern rays. Sampling indicates that this region serves as nurseries for several species of

large coastal and small coastal sharks (Atlantic sharpnose, bonnethead sharksblacknose, and blacktip).

Florida-Alabama Border

GULFSPAN sampling by the University of West Florida took place from Big Lagoon to the west end of Santa Rosa Sound, and was limited to a pilot run of the program. In 2013, four species of elasmobranchs were caught (Atlantic sharpnose, blacktop, scalloped hammerhead shark, and Atlantic stingray). Of the seven sharks caught, all were juveniles. Data indicate that the Pensacola Bay may serve as nursery habitat for at least one species of small coastal shark (Atlantic sharpnose shark) and two species of large coastal sharks (blacktip and scalloped hammerhead shark).

Mississippi

In 2013, GULFSPAN sampling by the University of Southern Mississippi Gulf Coast Research Laboratory covered five regions of the Mississippi Sound in Mississippi state waters: west, central, east, inshore central and inshore east.. Five species of shark (finetooth (most abundant), blacktip, Atlantic sharpnose, bull, and bonnethead) were encountered. No rays were encountered during this sampling year. Over half of the sharks captured were of juvenile or young of the year stature indicating the region continues to be used as nursery habitat.

Conclusion

The data obtained from both COASTSPAN and GULFSPAN surveys continues to provide the information necessary to identify new EFH areas and to further refine areas already designated as EFH by determining specific habitat characteristics associated with these EFH. Time series for both surveys continue to be used in the stock assessments for large and small coastal shark species and are essential for monitoring these populations and their habitat use in the areas surveyed.

Chapter 3 References

Bethea, D.M., K. Smith, J. Carlson, J. Hendon, R. Grubbs, and T. Daly-Engel. 2013. Shark Nursery Grounds and Essential Fish Habitat Studies (GULFSPAN survey). An internal report to NOAA Fisheries, Highly Migratory Species Management Division.

4. FISHERY DATA UPDATE

In this chapter, HMS fishery data are analyzed by gear type. While HMS fishermen generally target particular species, the non-selective nature of many fishing gears warrants analysis and management on a gear-by-gear basis. In addition, issues such as bycatch and safety are generally better addressed by gear type. A summary of bycatch, incidental catch, and protected resource interaction statistics can be found in Chapter 7 of this document.

The list of authorized fisheries and fishing gear used in those fisheries became effective December 1, 1999 (64 FR 67511) and has been modified several times in subsequent final rules. The list applies to all U.S. marine fisheries, including Atlantic HMS. As stated in the rule, "no person or vessel may employ fishing gear or participate in a fishery in the exclusive economic zone (EEZ) not included in this List of Fisheries (LOF) without giving 90 days' advance notice to the appropriate Fishery Management Council (Council) or, with respect to Atlantic HMS, the Secretary of Commerce (Secretary)."

HMS Fishery	Authorized Gear Types
Swordfish handgear	Rod and reel, harpoon, handline, bandit gear, buoy gear, green-stick (beginning in the 2014 fishing year)
Swordfish recreational	Rod and reel, handline
Pelagic longline	Longline, green-stick
Shark gillnet	Gillnet
Shark bottom longline	Longline
Shark handgear	Rod and reel, handline, bandit gear
Shark recreational	Rod and reel, handline
Tuna purse seine	Purse seine
Tuna recreational	Rod and reel, handline, speargun (allowed for tunas other than bluefin), green-stick (only for vessels possessing the Atlantic HMS Charter/Headboat permit)
Tuna handgear	Rod and reel, harpoon, handline, bandit gear
Tuna harpoon	Harpoon
Atlantic billfish recreational	Rod and reel only
Tuna green-stick	Green stick
HMS commercial Caribbean small boat	Rod and reel, handline, harpoon, bandit gear, green-stick, and buoy gear

The U.S. percentage of regional and total catch of HMS is presented to provide a basis for comparison of the U.S. catch relative to other nations/entities (Table 4.1). International catch levels and U.S. reported catches for HMS (other than sharks) are taken from the 2014 ICCAT Standing Report of the SCRS (SCRS, 2014). The SCRS data collection is reported by species; therefore, Table 4.1 depicts a summary of U.S. and international HMS catches by species rather than gear type. Catch of billfish includes both recreational landings and dead discards from commercial fisheries; bluefin tuna includes commercial landings and dead discards and recreational landings; and swordfish includes recreational landings and commercial landings and dead discards. International catch and landings data for the pelagic longline and purse seine fisheries are in Sections 4.1.3 and 4.2.3, respectively. Data necessary to compare the U.S. regional and total percentage of international catch levels for most Atlantic shark species are

currently limited; therefore, Table 4.1 provides information only on the species that have been assessed by the SCRS.

Table 4.1 U.S. vs. International Catch of HMS Reported to ICCAT (Calendar Year 2013)

Species	Total International Reported Catch (mt ww)	Region	Total Regional Catch (mt ww)	U.S. Catch (mt ww)	U.S. Percentage of Regional Catch	U.S. Percentage of Total Atlantic Catch
Atlantic swordfish	19,767	North Atlantic	11,980	2,834	23.6	14.33
		South Atlantic	7,787	0	0.0	
Atlantic bluefin tuna	14,817	West Atlantic	1,484	518	34.9	3.49
		East Atlantic/Med.	13,333	0	0.0	
Atlantic bigeye tuna	63,066	Atlantic/Med.	63,066	880	1.3	1.39
Atlantic yellowfin tuna	92,615	West Atlantic	20,702	2,332	11.2	2.51
		East Atlantic/Med.	71,913	0	0.0	
Atlantic albacore tuna	41,772	North Atlantic	20,948	599	2.8	1.43
		South Atlantic/Med.	20,823	0	0.0	
Atlantic skipjack tuna	249,845	West Atlantic	27,086	75	0.27	0.03
		East Atlantic/Med.	222,759	0	0.0	
Atlantic blue marlin	1,098	North Atlantic	641	9	1.4	0.81
		South Atlantic	457	0	0.0	
Atlantic white marlin	415	North Atlantic	189	4	2.1	0.96
		South Atlantic	225	0	0.0	
Atlantic sailfish	1,502	West Atlantic	412	3	0.72	0.19
		East Atlantic	1,090	0	0.0	
Blue sharks	56,552	North Atlantic	37,137	32	0.08	0.05
		South Atlantic/Med.	19,415	0	0.0	
Porbeagle sharks	188	North Atlantic	158	27	17.0	14.36
		South Atlantic/Med.	30	0	0.0	
Shortfin mako sharks	5,543	North Atlantic	3,635	402	11.0	7.25
		South Atlantic/Med.	1,907	0	0.0	

Source: SCRS, 2013.

4.1 Pelagic Longline

4.1.1 Current Management

The pelagic longline (PLL) fishery for Atlantic HMS primarily targets swordfish, yellowfin tuna, and bigeye tuna in various areas and seasons. Secondary target species include dolphin, albacore tuna, and, to a lesser degree, sharks. Although this gear can be modified (e.g., depth of set, hook type, hook size, bait, etc.) to target swordfish, tunas, or sharks, it is generally a multi-species fishery. PLL vessel operators are opportunistic, switching gear style and making subtle changes to target the best available economic opportunity on each individual trip. PLL gear sometimes attracts and hooks non-target finfish with little or no commercial value as well as

species that cannot be retained by commercial fishermen due to regulations, such as billfish. PLL gear may also interact with protected species such as marine mammals, sea turtles, and seabirds. Thus, this gear has been classified as a Category I fishery with respect to the Marine Mammal Protection Act (MMPA). Any species that cannot be landed due to fishery regulations (or undersized catch of permitted species) is required to be released, regardless of whether the catch is dead or alive.

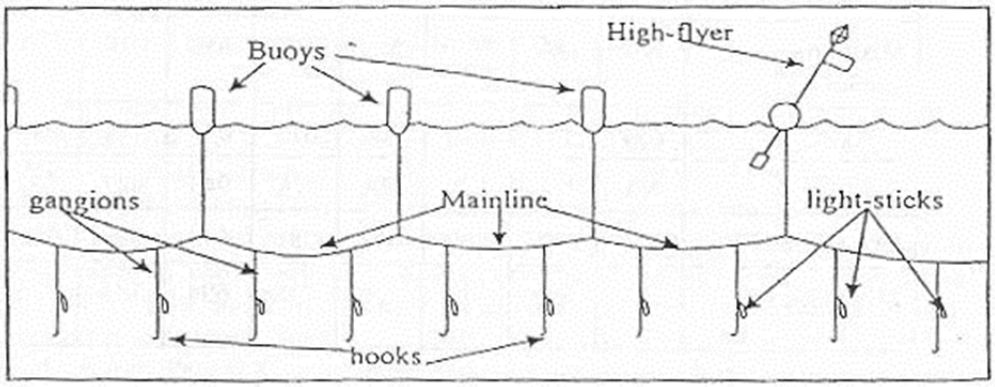

Figure 4.1 Typical U.S. Pelagic Longline Gear

Source: Arocha, 1997.

PLL gear is composed of several parts (Figure 4.1). The primary fishing line, or mainline of the longline system, can vary from five to 40 miles in length, with approximately 20 to 30 hooks per mile. The depth of the mainline is determined by ocean currents and the length of the floatline, which connects the mainline to several buoys, and periodic markers which can have radar reflectors or radio beacons attached. Each individual hook is connected by a leader, or gangion, to the mainline. Lightsticks, which contain light emitting chemicals, are often used, particularly when targeting swordfish. When attached to the hook and suspended at a certain depth, lightsticks attract baitfish, which may, in turn, attract pelagic predators (NMFS, 1999).

When targeting swordfish, PLL gear is generally deployed at sunset and hauled at sunrise to take advantage of swordfish nocturnal near-surface feeding habits (NMFS, 1999). In general, longlines targeting tunas are set in the morning, fished deeper in the water column, and hauled back in the evening. Except for vessels of the distant water fleet, which undertake extended trips, fishing vessels preferentially target swordfish during periods when the moon is full to take advantage of increased densities of pelagic species near the surface. The number of hooks per set varies with line configuration and target species (Table 4.2).

Table 4.2 Average Number of Hooks per Pelagic Longline Set (2004-2013)

Target Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Swordfish	701	747	742	672	708	687	759	728	683	735
Bigeye tuna	400	634	754	773	751	755	653	802	865	620
Yellowfin tuna	696	691	704	672	678	689	687	645	628	638
Mix of tuna species	779	692	676	640	747	744	837	786	728	694
Shark	717	542	509	494	377	354	455	348	525	NA
Dolphin	1,033	734	988	789	989	1,033	1,131	1,082	1,129	933
Other species	270	889	236	NA	NA	NA	467	400	300	NA
Mix of species	777	786	777	757	749	781	761	749	758	717

Source: Fisheries Logbook System.

Figure 4.2 illustrates basic differences between swordfish (shallow) and tuna (deep) longline sets. Swordfish sets are buoyed to the surface, have fewer hooks between floats, and are relatively shallow. This same type of gear arrangement is used for mixed target species sets. Tuna sets use a different type of float placed much further apart. Compared with swordfish sets, tuna sets have more hooks between the floats and the hooks are set much deeper in the water column. It is believed that tuna sets hook fewer turtles than the swordfish sets because of the difference in fishing depth. In addition, tuna sets use bait only, while swordfish sets use a combination of bait and lightsticks. Compared with vessels targeting swordfish or mixed species, vessels specifically targeting tuna are typically smaller and fish different grounds.

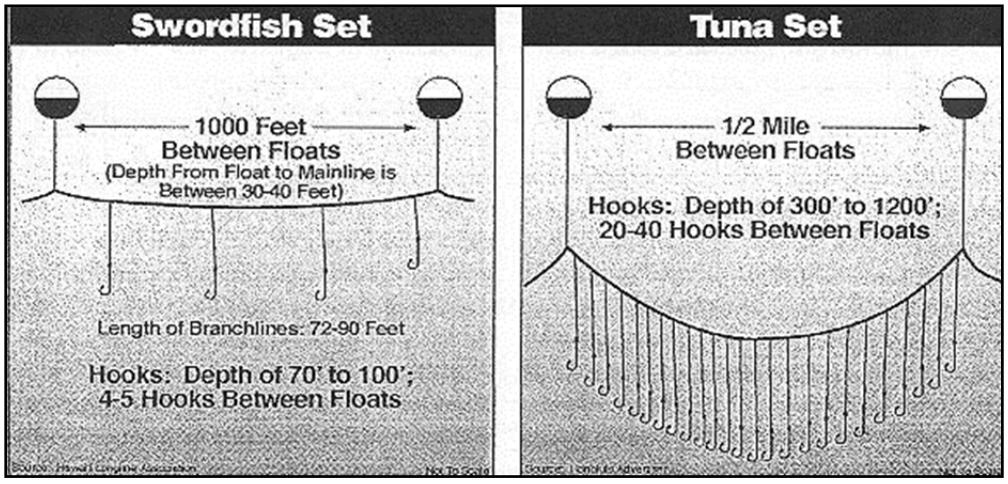

Figure 4.2 Pelagic Longline Gear Deployment Techniques

Note: This figure is only included to show basic differences in pelagic longline gear configuration and to illustrate that this gear may be altered to target different species. Source: Hawaii Longline Association and Honolulu Advertiser.

The 1999 FMP established six different limited access permit (LAP) types: (1) directed swordfish, (2) incidental swordfish, (3) swordfish handgear, (4) directed shark, (5) incidental shark, and (6) Atlantic tunas longline. To reduce bycatch in the PLL fishery, these permits were designed so that the swordfish directed and incidental permits are valid only if the permit holder also holds both a tuna longline and a shark permit. Similarly, the tuna longline permit is valid

only if the permit holder also holds both a swordfish (directed or incidental, not handgear) and a shark permit. This allows limited retention of species that might otherwise have been discarded.

As of November 2014, approximately 246 tuna longline LAPs had been issued. In addition, approximately 183 directed swordfish LAPs, 66 incidental swordfish LAPs, 206 directed shark LAPs, and 258 incidental shark LAPs had been issued (see Table 8.1 for more detailed data on LAPs). Not all vessels with limited access swordfish and shark permits use PLL gear, but these are the only permits ((1) tuna longline; (2) shark LAP; and, (3) swordfish LAP (other than handgear)) that allow for the use of PLL gear in HMS fisheries.

On December 2, 2014, NMFS announced the final rule to implement Amendment 7 to the 2006 Consolidated HMS FMP. This action was necessary to meet domestic management objectives under the Magnuson-Stevens Act including preventing overfishing, achieving optimum yield, and minimizing bycatch to the extent practicable, as well as the objectives of ATCA and obligations pursuant to binding recommendations of ICCAT. Amendment 7 is intended to reduce and account for bluefin dead discards in all categories; optimize fishing opportunities in all categories within the United States' quota; enhance reporting and monitoring; and adjust other management measures as necessary. Most of the management measures in the final rule will take effect January 1, 2015, while some measures will take effect on either June 1, 2015, or January 1, 2016. More detailed information regarding this rule is available at http://www.nmfs.noaa.gov/sfa/hms/documents/fmp/am7/index.html.

PLL Observer Program

During 2013, NMFS observers recorded 1,474 PLL sets for overall non-experimental fishery coverage of 14.1 percent (Garrison, pers comm). Table 4.3 details the amount of observer coverage in past years for this fleet.

The Pelagic Longline Take Reduction Plan (PLTRP) (74 FR 23349, May 19, 2009) recommended that NMFS increase observer coverage to 12 to 15 percent throughout all Atlantic PLL fisheries that interact with pilot whales and Risso's dolphins to ensure representative sampling of fishing effort. If resources are not available to provide such observer coverage for all fisheries, regions, and seasons, the Pelagic Longline Take Reduction Team (PLTRT) recommended NMFS allocate observer coverage to fisheries, regions, and seasons with the highest observed or reported bycatch rates of pilot whales. The PLTRT recommended that additional coverage be achieved either by increasing the number of NMFS observers who have been specially trained to collect additional information supporting marine mammal research, or by designating and training special "marine mammal observers'' to supplement traditional observer coverage. In 2013, total observer coverage, including experimental sets, was 14.4 percent (Table 4.3).

Table 4.3 Observer Coverage of the Atlantic Pelagic Longline Fishery (1999-2013)

Year	Number of Sets Observed			Percentage of Total Number of Sets		
1999	420			3.8		
2000	464			4.2		
	Total	Non-NED	NED	Total	Non-NED	NED
2001[1]	584	398	186	5.4	3.7	100
2002[1]	856	353	503	8.9	3.9	100
2003[1]	1,088	552	536	11.5	6.2	100
	Total	Non-EXP	EXP	Total	Non-EXP	EXP
2004[2]	702	642	60	7.3	6.7	100
2005[2]	796	549	247	10.1	7.2	100
2006	568	-	-	7.5	-	-
2007	944	-	-	10.8	-	-
2008[3]	1,190	-	101	13.6	-	100
2009[3]	1,588	1,376	212	17.3	15	100
2010[3]	884	725	159	11	9.7	100
2011[3]	879	864	15	10.9	10.1	100
2012[4]	1,060	945	115	9.5	8.6	100
2013	1,528	1,474	54	14.4	14.1	100

NED – Northeast Distant Area; EXP – experimental. 1In 2001, 2002, and 2003, 100 percent observer coverage was required in the NED research experiment. 2In 2004 and 2005, there was 100 percent observer coverage in EXP. 3In 2008- 2011, 100 percent observer coverage was required in experimental fishing in the FEC, Charleston Bump, and GOM, but these sets are not included in extrapolated bycatch estimates because they are not representative of normal fishing. 4In 2012, 100 percent observer coverage was required in a cooperative research program in the GOM to test the effectiveness of "weak hooks" on target species and bycatch rates, but these sets are not included in extrapolated bycatch estimates because they are not representative of normal fishing. Sources: Yeung, 2001; Garrison, 2003b; Garrison and Richards, 2004; Garrison, 2005; Fairfield-Walsh and Garrison, 2006; Fairfield-Walsh & Garrison, 2007; Fairfield & Garrison, 2008; Garrison, Stokes & Fairfield, 2009; Garrison and Stokes, 2010, 2011, 2012, 2013, 2014; Garrison, pers. comm. 2014.

4.1.2 Recent Catch, Landings, and Bycatch

U.S. Atlantic PLL catch (including bycatch, incidental catch, and target catch) is largely related to vessel characteristics and gear configuration. The reported catch, in numbers of fish, is summarized for the whole fishery in Table 4.4. Table 4.5 provides a summary of U.S. Atlantic PLL landings, as reported to the International Commission for the Conservation of Atlantic Tunas (ICCAT).

Table 4.4 Catch Reported in the U.S. Atlantic Pelagic Longline Fishery, in Number of Fish per Species (2004-2013)

Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Swordfish kept	46,440	41,139	38,241	45,933	42,800	45,378	33,831	38,721	51,544	44,556
Swordfish discarded	10,675	11,134	8,900	11,823	11,194	7,484	6,107	8,736	7,996	4,756
Blue marlin discarded	712	567	439	611	687	1,013	504	544	896	844
White marlin discarded	1,053	989	557	744	670	1,064	605	943	1,432	1,239
Sailfish discarded	424	367	277	321	506	774	312	581	795	456
Spearfish discarded	172	150	142	147	197	335	212	281	270	342
Bluefin tuna kept	475	375	261	337	343	629	392	347	392	273
Bluefin tuna discarded	1,031	765	833	1,345	1,417	1,290	1,488	765	563	266
Bigeye, albacore, yellowfin, and skipjack tunas kept	76,962	57,132	73,058	70,390	50,108	57,461	51,786	69,504	84,707	67,083
Pelagic sharks kept	3,440	3,149	2,098	3,504	3,500	3,060	3,872	3,732	2,794	3,384
Pelagic sharks discarded	25,355	21,550	24,113	27,478	28,786	33,721	45,511	43,806	23,038	28,151
Large coastal sharks kept	2,292	3,362	1,768	546	115	403	434	131	86	49
Large coastal sharks discarded	5,230	5,877	5,326	7,133	6,732	6,672	6,726	6,351	7,716	7,997
Dolphin kept	38,769	25,707	25,658	68,124	43,511	62,701	30,454	30,054	42,445	34,250
Wahoo kept	4,633	3,348	3,608	3,073	2,571	2,648	749	1,922	3,121	2,721
Sea turtle interactions	369	152	128	300	476	137	94	66	61	92
Number of Hooks (× 1,000)	7,276	5,911	5,662	6,291	6,498	6,979	5,729	6,035	7,679	7,306

Source: Fisheries Logbook System.

Table 4.5 Reported Landings (mt ww) in the U.S. Atlantic Pelagic Longline Fishery (2004-2013)

Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Yellowfin tuna	2,492.2	1,746.2	2,009.9	2,394.5	1,324.5	1,700.1	1,188.8	1,458.3	2,281.0	1,543.5
Skipjack tuna	0.7	0.6	0.2	0.02	1.45	0.5	1.4	0.6	0.4	0.4
Bigeye tuna	310.1	311.9	520.6	380.7	407.7	430.1	443.2	600.2	583.2	508.4
Bluefin tuna*	180.1	211.5	204.6	164.3	232.6	335.0	238.7	241.4	291.9	190.4
Albacore tuna	120.4	108.5	102.9	126.8	126.5	158.3	159.9	240.0	261.4	255.8
Swordfish N.*	2,518.5	2,272.8	1,960.8	2,474.0	2,353.6	2,691.3	2,206.2	2,570.9	3,384.5	2,823.1
Swordfish S.*	15.7	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.06

* Includes landings and estimated discards from scientific observer and logbook sampling programs. Source: NMFS, 2014.

Consistent with ICCAT Recommendations 09-07, 10-07, 10-08, and 11-08, the United States has prohibited the retention of bigeye thresher sharks in all fisheries (since 1999); prohibited retaining, transshipping, landing, storing, or selling oceanic whitetip sharks (*Carcharhinus longimanus*) or hammerhead sharks in the family Sphyrnidae (except for *Sphyrna tiburo*) caught in association with ICCAT fisheries (since 2011); and prohibited retaining on board, transshipping, or landing silky sharks (*C. falciformis*) since 2012. Additionally, in 2012, to be consistent with the oceanic whitetip and hammerhead shark prohibitions, the United States also prohibited the storing, selling, or purchasing of silky sharks caught in association with ICCAT fisheries. The data on the number of releases (and status) of ICCAT prohibited species from pelagic longline vessels during 2013 can be found in Table 4.6.

Table 4.6 ICCAT-Designated Prohibited Shark Interactions and Dispositions (2013)

Species	Released Unknown	Kept	Released Dead	Released Alive	Lost at Surface
Bigeye thresher	0	0	30	33	0
Silky	0	0	169	194	1
Great hammerhead	0	0	15	18	0
Oceanic whitetip	0	0	4	29	0
Smooth hammerhead	0	0	0	1	0
Scalloped hammerhead	0	0	141	105	0

Source: NMFS Pelagic Observer Program.

Bycatch mortality of marlins, sailfish, swordfish, and bluefin tuna from all fishing nations may significantly affect the ability of these populations to rebuild, and it remains an important management issue. In order to minimize bycatch and bycatch mortality in the domestic PLL fishery, NMFS implemented regulations to close certain areas to this gear type (Figure 4.3) and has banned the use of live bait and required the use of weak hooks by PLL vessels in the Gulf of Mexico.

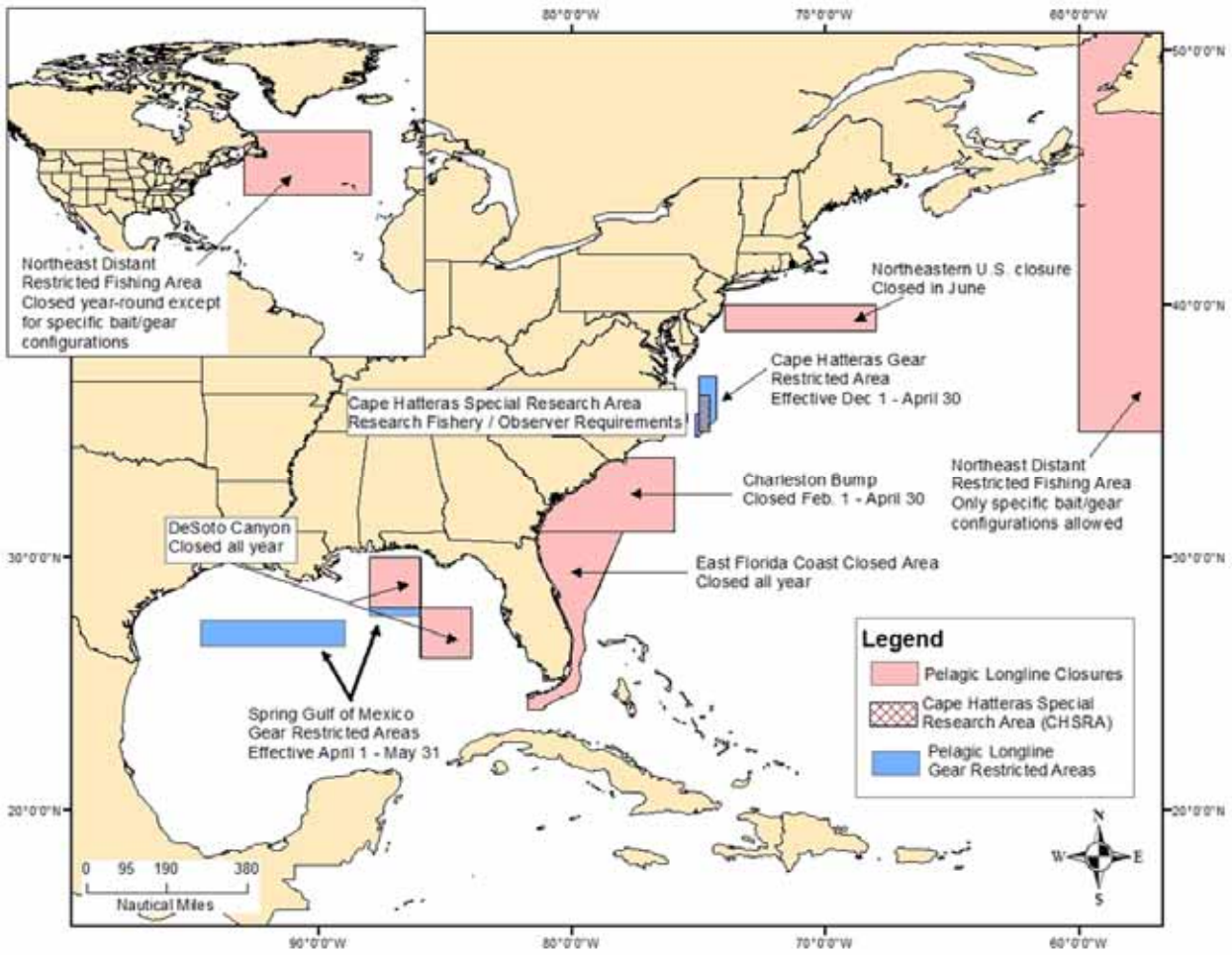

Figure 4.3 Areas Closed to Pelagic Longline Fishing by U.S. Flagged Vessels

Bluefin Tuna – Amendment 7 to the Consolidated Atlantic HMS FMP

To reduce and account for bluefin tuna dead discards in all categories; optimize fishing opportunities in all categories within the U.S. quota; enhance reporting and monitoring; and to adjust other management measures, as necessary, NMFS recently published a final rule to implement Amendment 7 to the Consolidated Atlantic HMS FMP (79 FR 71510, December 2, 2014). Four components of Amendment 7 will primarily affect the U.S. PLL fishery. These include: (1) new PLL Gear Restricted Areas (GRAs); (2) an Individual Bluefin Quota (IBQ) program; (3) mandatory electronic monitoring of PLL gear at haulback; and, (4) catch reporting of each PLL set using vessel monitoring systems (VMS).

The locations of the new GRAs are provided in Figure 4.3 above. The GRAs encompass regions with elevated bluefin interaction rates for PLL vessels, as determined from observer and logbook data. The primary objectives of the GRAs are to reduce bluefin interactions (and the potential for dead discards), and to minimize economic and social impacts on the PLL fishery.

The Cape Hatteras GRA is located off the coast of North Carolina and is effective from December through April of a given year. A vessel that has been issued, or is required to have been issued, an Atlantic tunas limited access longline permit (and other associated permits as

required) may be granted conditional access to fish with PLL gear in the Cape Hatteras GRA provided the permit holder/ eligible vessel have demonstrated an ability to avoid bluefin and comply with reporting and monitoring requirements. The use of other gear types authorized for the pelagic longline permit, such as buoy gear, green-stick gear, or rod and reel gear would be allowed by pelagic longline vessels.

The Spring Gulf of Mexico GRA consists of two areas in the Gulf of Mexico and limits access to these areas for vessels fishing with pelagic longline gear during the 2-month period from April through May of a given year. Other gear types authorized for use by PLL vessels such as buoy gear, green-stick gear, or rod and reel are allowed in these areas provided the vessel abides by any rules/regulations that apply to those gear types.

The IBQ program is a limited access privilege program that limits the total incidental catch (landings and dead discards) of bluefin for individual vessels in the Longline category. This program is intended to reduce bluefin tuna dead discards by capping the amount of catch (landings and dead discards) for individual vessels; provide strong incentives to reduce interactions and flexibility for vessels to continue to operate profitably; accommodate different fishing practices within the pelagic longline fleet; and create new potential for revenue (from a market for leasable IBQ allocation).

HMS permit holders that have an eligible Atlantic Tunas Longline permit have been issued an IBQ share percentage of the overall Longline quota ("quota share"), and are eligible to receive annual allocations associated with that permit. Participants in the IBQ program may also lease additional quota from other participants to account for landings of bluefin, dead discards, and to resolve quota debt.

Mandatory electronic monitoring of PLL gear at haulback (effective June 1, 2015) will require permit owner/operators (or their representatives) that intend to fish using an Atlantic Tunas Longline permit with pelagic longline gear to coordinate with NMFS-approved contractors to install, test, and certify electronic monitoring equipment. NMFS has identified funds to pay for the equipment and its installation for all of the vessels currently eligible for IBQ shares.Amendment 7 also requires vessels fishing with PLL gear to report through VMS the following information within 12 hours of completion of each PLL set: date the set was made; area in which the set was made; the number of hooks in the set; and the approximate length of all bluefin tuna retained, discarded dead, or released alive (by standardized size ranges). If a vessel is fishing both inside and outside of the Northeast Distant Area (NED) on the same trip, that vessel must submit two VMS bluefin catch reports noting the location of the catch. Permit holders must also submit a landing notification at least 3 hours, but no more than 12 hours, prior to any landing.

Additional information regarding requirements for PLL vessels can be found in the HMS Commercial Fishing Compliance Guide (http://www.nmfs.noaa.gov/sfa/hms/compliance/guides/index.html), and in the Amendment 7 Compliance Guide and IBQ Program FAQ documents (http://www.nmfs.noaa.gov/sfa/hms/documents/fmp/am7/index.html).

Protected Species - Marine Mammals

Many of the marine mammals that are hooked by U.S. PLL fishermen are released alive, although some animals suffer serious injuries and may die after being released. The observed and estimated marine mammal interactions for 2003 – 2013 are summarized in Table 4.7. Marine mammals are caught primarily during the third and fourth quarters in the Mid Atlantic Bight (MAB), and the South Atlantic Bight (SAB) in quarter 2. In 2013, the majority of observed interactions were with pilot whales (Garrison and Stokes, 2014**)**. NMFS monitors observed interactions with sea turtles and marine mammals on a quarterly basis and reviewed data for appropriate action, if any, as necessary.

On March 31, 2014, NMFS requested reinitiation of Section 7 consultation under the Endangered Species Act (ESA) on the Atlantic pelagic longline fishery. Despite sea turtle takes that were lower than specified in the ITS, leatherback mortality rates and total mortality levels had exceeded the level specified in the reasonable and prudent alternatives (RPAs) in the 2004 biological opinion. Additionally, new information has become available about leatherback and loggerhead sea turtle populations and sea turtle mortality. While the mortality rate measure will be re-evaluated during consultation, the overall ability of the RPA to avoid jeopardy is not affected, and NMFS is continuing to comply with the terms and conditions of the RPA and RPMs pending completion of consultation. NMFS also has confirmed that there will be no irreversible or irretrievable commitment of resources that would foreclose the formulation or implementation of any reasonable and prudent alternative measures pending completion of consultation, consistent with section 7(d) of the Act.

On July 3, 2014, NMFS issued the final determination to list the Central and Southwest Atlantic Distinct Population Segment (DPS) of scalloped hammerhead shark (Sphyrna lewini) as threatened species pursuant to the ESA. On August 27, 2014, NMFS published a final rule to list the following 20 coral species as threatened: five in the Caribbean including Florida and the Gulf of Mexico (*Dendrogyra cylindrus, Orbicella annularis, O. faveolata, O. franksi,* and *Mycetophyllia ferox*); and 15 in the Indo-Pacific (*Acropora globiceps, A. jacquelineae, A. lokani, A. pharaonis, A. retusa, A. rudis, A. speciosa, A. tenella, Anacropora spinosa, Euphyllia paradivisa, Isopora crateriformis, Montipora australiensis, Pavona diffluens, Porites napopora,* and *Seriatopora aculeata*). Additionally, in that August 2014 rule, two species that had been previously listed as threatened (*A. cervicornis* and *A. palmata*) in the Caribbean were found to still warrant listing as threatened. The Central and Southwest Atlantic DPS of scalloped hammerhead sharks and seven Caribbean species of corals occur within the management area of Atlantic HMS commercial and recreational fisheries which are managed by NMFS's Office of Sustainable Fisheries, HMS Management Division. Therefore, on October 30, 2014, NMFS requested reinitiation of ESA section 7 consultation on the continued operation and use of HMS gear types (bandit gear, bottom longline, buoy gear, handline, and rod and reel) and associated fisheries management actions in the 2006 Consolidated Atlantic HMS FMP and its amendments.

Table 4.7 Marine Mammal Interactions in the Atlantic Pelagic Longline Fishery (2003–2013)

Year	Species	Total		Mortality		Serious Injury		Alive	
		Obs.	Est.	Obs.	Est.	Obs.	Est.	Obs.	Est.
2003	Beaked whale	2	48.8	-	-	1	5.3	1	43.5
	Dolphin	1	16.2	-	-	1	16.2	-	-
	Atlantic spotted dolphin	1	29.8	-	-	1	29.8	-	-
	Bottlenose dolphin	1	2.0	-	-	-	-	1	2.0
	Common dolphin	2	45.6	-	-	-	-	2	45.6
	Risso's dolphin	14	109.5	1	1.0	3	40.1	10	68.4
	Striped dolphin	1	1.0	-	-	-	-	1	1.0
	Pilot whale	4	32.1	-	-	2	21.4	1	11.3
	Baleen whale	1	1.0	-	-	-	-	1	1.0
	Minke whale	1	22.3	-	-	-	-	1	22.3
2004	Pilot whale	8	107.5	-	-	6	74.1	2	33.8
	Common dolphin	1	6.8	-	-	-	-	1	6.8
	Risso's dolphin	3	49.4	-	-	2	27.5	1	21.9
2005	Pilot whale	18	294.4	-	-	9	211.5	9	79.5
	Risso's dolphin	2	42.1	-	-	-	2.9	2	39.2
	Common dolphin		5.7	-	-	-	-	-	5.7
	Bottlenose dolphin	1	5.2	-	-	-	-	1	5.2
	Beaked whale		1.0	-	-	-	1.0	-	-
	Atlantic spotted dolphin	1	4.3	-	-	-	-	1	4.3
	Unidentified marine mammal	1	13.2	-	-	1	13.2	-	-
	Unidentified whale		3.4	-	-	-	3.4	-	-
	Unidentified dolphin	1	2.6	-	-	-	-	1	2.6
2006	Atlantic spotted dolphin		1.9	-	-	-	-	-	1.9
	Beaked whale		2.2	-	-	-	-	-	2.2
	Bottlenose dolphin		0.6	-	-	-	-	-	0.6
	Pilot whale	20	274.5	1	15.5	12	168.6	7	90.4
	Unidentified dolphin	2	26.5	-	-	2	26.5	-	-
	Unidentified marine mammal	1	12.6	1	12.6	-	-	-	-
2007	Atlantic spotted dolphin		1.4	-	-	-	-	-	1.4
	Bottlenose dolphin	2	12.6	-	-	1	-	1	12.6
	Beaked whale	1	1.5	-	-	-	-	1	1.5
	Pilot whale	8	86.6	-	-	5	56.7	3	30.7
	Risso's dolphin	2	20.3	-	-	1	9.3	1	11.0
	Unidentified dolphin	2	3.8	1	1.5	-	-	1	2.3
	Unidentified marine mammal	2	22.1	-	-	2	22.1	-	-
2008	Atlantic spotted dolphin		3.1	-	-	-	-	-	3.1
	Bottlenose dolphin	1	6.6	-	-	-	-	1	6.6
	Beaked whale	1	6.1	-	-	-	-	1	6.1
	Killer whale	1	3.4	-	-	-	-	1	3.4
	Pilot whale	8	141.5	-	-	5	98.2	3	43.3
	Risso's dolphin	9	64.4	1	4.4	4	20.4	4	39.6
	Sperm whale	1	1.6	-	-	-	-	1	1.6
	Unidentified dolphin		3.2	-	-	-	-	-	3.2

Year	Species	Total		Mortality		Serious Injury		Alive	
		Obs.	Est.	Obs.	Est.	Obs.	Est.	Obs.	Est.
	Unidentified marine mammal	2	34.7	-	-	1	20.4	1	14.3
2009	Bottlenose dolphin	3	23.0	-	-	2	11.3	1	11.6
	Common dolphin	1	8.5	1	8.5	-	-	-	-
	False Killer whale		2.5	-	-	-	-	-	2.5
	Pantropical spotted dolphin	5	26.6	-	-	4	14.1	1	12.5
	Pilot whale	4	35.7	-	-	2	16.5	2	19.2
	Risso's dolphin	5	38.5	-	-	2	11.4	3	27.1
	Unidentified dolphin	1	1.6	-	-	-	-	1	1.6
	Unidentified marine mammal	1	8.0	-	-	1	8.0	-	-
2010	Bottlenose dolphin	2	16.9	-	-	1	1.0	1	15.9
	Minke whale	1	24.4	-	-	-	-	2	24.4
	Pantropical spotted dolphin	3	6.1	-	-	-	-	2	5.1
	Pilot whale	10	149.9	-	-	8	126.5	2	20.5
	Pygmy sperm whale	1	1.2	1	1.2	-	-	-	-
	Risso's dolphin	1	9.9	-	-	-	-	1	9.9
	Unidentified dolphin	1	1.5	-	-	-	-	1	1.5
	Unidentified marine mammal	4	27.5	1	5.5	3	21.9	-	-
2011	Bottlenose dolphin	3	40.5	-	-	1	12.2	2	28.3
	False killer whale	1	11.0	-	-	-	-	1	11.0
	Atlantic spotted dolphin	1	0.8	-	-	-	-	1	0.8
	Pilot whale	16	291.7	1	18.7	12	233.8	3	39.5
	Short-finned pilot whale	4	58.3	-	-	3	46.5	1	11.8
	Pygmy/Dwarf sperm whale	1	17.0	-	-	1	17.0	-	-
	Risso's dolphin	7	31.3	-	-	3	13.3	4	18.0
	Unidentified dolphin	1	1.1	-	-	1	1.1	-	-
2012	Bottlenose dolphin	6	101.0	-	-	4	77.5	2	23.5
	Pilot whale	19	242.6	-	-	14	170.1	5	72.4
	Short-finned pilot whale	1	10.0	-	-	-	-	1	10.0
	Pantropical spotted dolphin*	1	1.0	1	1	-	-	-	-
	Risso's dolphin	3	58.2	-	-	2	45.0	1	13.2
2013	Beaked whale	1	11.0	-	-	1	11.0	-	-
	Bottlenose dolphin	2	9.1	-	-	-	-	2	9.1
	Harbor porpoise	1	13.6	-	-	1	13.6	-	-
	Minke whale	1	12.4	-	-	1	12.4	-	-
	Pantropical spotted dolphin	3	8.8	-	-	1	3.1	2	6.7
	Pilot whale	24	189.6	-	-	15	126.3	9	63.3
	Pygmy sperm whale	1	3.6	-	-	-	-	1	3.6
	Risso's dolphin	2	17.1	-	-	2	17.1	-	-
	Unidentified dolphin	3	10.8	-	-	2	3.1	1	7.7
	Unidentified marine mammal	1	12.5	-	-	1	12.5	-	-

Obs. – observed; Est. – estimated. * Pantropical spotted dolphin was observed dead in an experimental set.
Sources: Garrison and Richards, 2004; Garrison, 2005; Walsh and Garrison, 2006; Fairfield-Walsh and Garrison, 2007; Fairfield and Garrison, 2008; Garrison, Stokes & Fairfield, 2009; Garrison and Stokes, 2010, 2011, 2012, 2013, 2014.

Protected Species - Sea Turtles

As a result of increased sea turtle interactions in 2001 and 2002, NMFS reinitiated consultation for the PLL fishery and completed a new biological opinion on June 1, 2004. The June 2004 biological opinion concluded that long-term continued operation of the Atlantic PLL fishery as proposed was not likely to jeopardize the continued existence of loggerhead, green, hawksbill, Kemp's ridley, or olive ridley sea turtles, but was likely to jeopardize the continued existence of leatherback sea turtles. The biological opinion included a Reasonable and Prudent Alternative (RPA) which was adopted and implemented within the PLL fishery, and an Incidental Take Statement (ITS) for 2004 – 2006 combined, and for each subsequent three-year period (NMFS, 2004). The estimated sea turtle takes for regular fishing and experimental fishing effort for 2003- 2013 are summarized in Table 4.9 and Table 4.10. Loggerhead interactions are more widely distributed; however, the NED and the NEC appear to be areas with high interaction levels each year.

Sea turtle bycatch in the U.S. Atlantic PLL fishery has decreased significantly in the last decade. From 1999 to 2003, the PLL fleet targeting HMS interacted with an average of 772 loggerhead and 1,013 leatherback sea turtles per year, based on observed takes and total reported effort. In 2004, the fleet was estimated to have interacted with 734 loggerhead and 1,362 leatherback sea turtles (Garrison, 2005). These numbers have been reduced and in 2013, the U.S Atlantic PLL fishery was estimated to have interacted with 376 loggerhead sea turtles and 363 leatherback sea turtles outside of experimental fishing operations (Garrison and Stokes, 2013) (Table 4.10). In 2013, the majority of loggerhead sea turtle interactions occurred in the NEC, MAB, and NED areas (Table 4.8). Interactions with leatherback sea turtles were highest in the GOM, NEC, and MAB areas (Table 4.9). The total interactions for the most recent 3-year ITS period (2010-12) were below the level established by the ITS in the 2004 biological opinion for both loggerheads and leatherbacks. NMFS monitors observed interactions with sea turtles and marine mammals on a quarterly basis and reviews data for additional appropriate action, if any, as necessary.

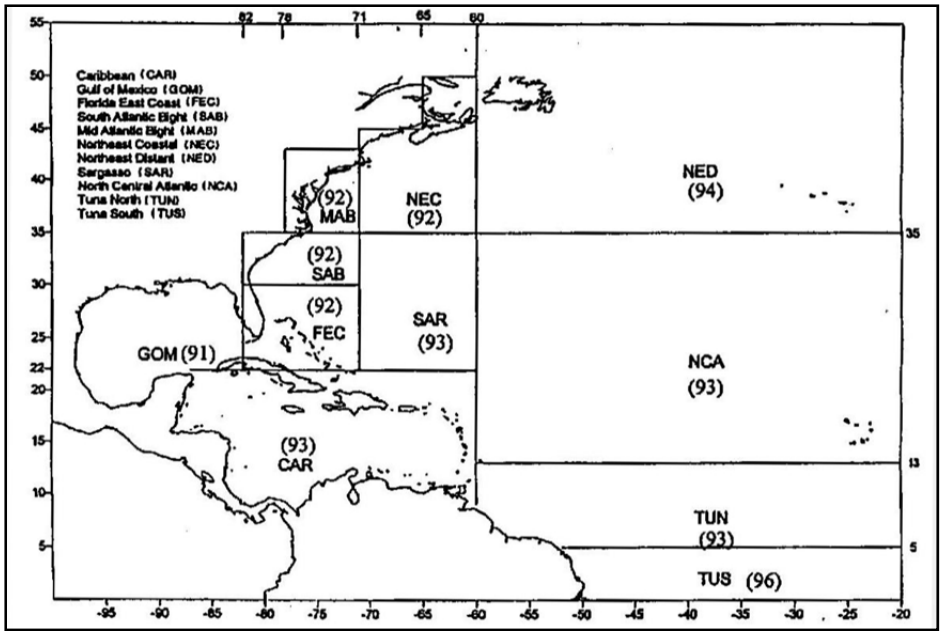

Figure 4.4 Geographic Areas Used in Summaries of Pelagic Logbook Data

Source: Cramer and Adams, 2000.

Table 4.8 Estimated Number of Loggerhead Sea Turtle Interactions in the U.S. Atlantic Pelagic Longline Fishery, by Statistical Area (2004-2013)

Area	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
CAR	61	40	16	7	17	9	12	4	0	4
GOM	45	19	17	10	10	38	2	0	56	20
FEC	99	0	40	83	47	41	26	92	157	50
SAB	194	34	18	34	70	47	39	9	37	14
MAB	92	54	70	155	20	37	55	81	71	91
NEC	150	67	135	48	237	43	101	103	199	139
NED	52	20	235	200	352	22	97	105	161	49
SAR	41	38	19	4	16	7	13	44	0	11
NCA	0	3	10	2	1	0	0	0	0	0
TUN	0	0	0	0	0	9	0	0	0	0
TUS	0	0	0	0	0	0	0	0	0	0
Total	734	275	559	543	770	243	344	438	681	376
NED experimental fishery (2001-03)	-	-	-	-	-	-	-	-	-	-
Experimental fishery (2004-05; 2008-12)	0	8	-	-	1	0	0	0	0	1
Total	734	283	559	543	771	243	344	438	681	377

Sources: Garrison and Richards, 2004; Garrison, 2005; Walsh and Garrison, 2006; Fairfield-Walsh and Garrison, 2007; Fairfield and Garrison, 2008; Garrison et al., 2009; Garrison and Stokes, 2010, 2011, 2012, 2013, 2014.

Table 4.9 Estimated Number of Leatherback Sea Turtle Interactions in the U.S. Atlantic Pelagic Longline Fishery, by Statistical Area (2004-2013)

Area	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
CAR	17	2	4	1	2	1	10	3	0	3
GOM	780	179	109	212	144	93	26	33	250	144
FEC	64	62	28	7	30	19	20	17	75	41
SAB	164	7	39	0	0	31	13	12	119	11
MAB	184	11	30	114	43	31	0	140	46	52
NEC	33	6	73	76	140	73	40	26	60	93
NED	98	63	116	84	0	37	55	8	41	11
SAR	18	20	14	5	14	3	2	0	3	6
NCA	0	0	1	0	0	0	0	0	0	0
TUN	0	0	0	0	8	1	0	1	2	2
TUS	0	0	0	0	0	0	0	0	0	0
Total	1,359	351	415	499	381	286	166	239	596	363
NED experimental fishery (2003)	-	-	-	-	-	-	-	-	-	-
Experimental fishery (2004-05; 2008-12)	3	17	-	-	4	4	2	1	2	3
Total	1,362	368	415	499	385	290	168	240	598	366

Sources: Garrison and Richards, 2004; Garrison, 2005; Walsh and Garrison, 2006; Fairfield-Walsh and Garrison, 2007; Fairfield and Garrison, 2008; Garrison et al, 2009; Garrison and Stokes, 2010, 2011, 2012, 2013, 2014.

Table 4.10 Estimated Sea Turtle and Marine Mammal Interactions and Incidental Take Levels (ITS) in the US Atlantic Pelagic Longline Fishery (by Species, 2004-2013)

Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	3 year ITS (2004-06 / 2007-09*) Total
Leatherback	1,362	368	415	499	385	290	168	240	598	366	1,981 / 1,764
Loggerhead	734	283	559	543	771	243	344	438	681	377	1,869 / 1,905
Other/unidentified sea turtles	0	0	11	1	0	0	3	4	15	0	105 / 105
Marine mammals	164	372	313	151	265	144	237	452	413	289	N/A

* Applies to all subsequent 3-year ITS periods

Protected Species - Seabirds

Observer data indicate that seabird bycatch is low in the U.S. Atlantic PLL fishery (Table 4.11 and Table 4.12) (NMFS, 2012). In 2013, there were 115 active U.S. PLL vessels fishing for swordfish in the Atlantic Ocean, Gulf of Mexico, and Caribbean Sea that reportedly set approximately 7.3 million hooks. Two seabirds were observed taken, a laughing gull and a parasitic jaeger. These seabirds were released dead.

Table 4.11 Observed Seabird Bycatch in the U.S. Atlantic Pelagic Longline Fishery (2004-2013)

Year	Quarter	Area	Type of Bird	Number observed	Status
2004	1	MAB	Gull	5	dead
	3	MAB	Shearwater greater	1	alive
	3	MAB	Shearwater greater	4	dead
	4	NED	Seabird	1	dead
2005	1	SAB	Gull herring	1	dead
	1	SAB	Shearwater spp	1	dead
	3*	NEC	Shearwater greater	1	alive
	3*	NEC	Shearwater greater	1	dead
2006	4	MAB	Shearwater greater	1	dead
	4	NEC	Shearwater spp	1	alive
	4	NED	Shearwater greater	1	dead
2007	1	MAB	Gull blackbacked	6	dead
2008	2	GOM	Pelican brown	1	alive
2009	1	MAB	Northern gannet	2	alive
	1	MAB	Northern gannet	1	dead
	2	GOM	Brown pelican	1	dead
	3	MAB	Shearwater greater	3	dead
	3	MAB	Unid	1	dead
2010	4	MAB	Gull herring	1	dead
2011	3	NED	Northern gannet	1	dead
	3	NED	Unid	1	dead
	4	MAB	Herring gull	3	dead
	4	MAB	Unid gull	1	dead
	4	MAB	Greater shearwater	1	dead
2012	4	GOM	Laughing gull	1	dead
2013	2	GOM	Laughing gull	1	dead
	4	GOM	Parasitic jaeger	1	dead

* Experimental fishery takes. Source: NMFS Pelagic Observer Program.

Table 4.12 Status of Seabird Bycatch in the U.S. Atlantic Pelagic Longline Fishery (1992-2013)

Species	Release Status		Total	Percent Dead
	Dead	Alive		
Greater shearwater	29	3	32	90.6
Cory's shearwater	1	-	1	100.0
Unidentified shearwater	2	1	3	66.7
Herring gull	12	-	12	100.0
Great black-backed gull	9	1	10	90.0
Laughing gull	3	1	4	75.0
Unidentified gull	15	8	23	65.2
Northern gannet	3	9	12	25.0
Storm petrel	1	-	1	100.0
Unidentified seabird	41	19	60	68.3
Brown pelican	2	0	2	100.0
Parasitic jaeger	1	0	1	100.0
Total	119	42	161	73.9

Source: NMFS Pelagic Observer Program.

In 2014, NMFS released a report titled "Implementation of the United States National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries." It highlighted advancements made by the United States toward the objectives of the 2001 U.S. "National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries." Since 2001, the United States has improved research, outreach and education on, and domestic management of incidental seabird catch, resulting in a significant decrease in seabird incidental catch in its domestic fisheries.

The Seabirds on the Western North Atlantic and Interactions with Fisheries project, as described in the 2014 report, was carried out at the Southeast Fisheries Science Center (SEFSC). This project aimed to improve the identification of incidental seabird catch on the Western North Atlantic U.S. pelagic longline fishery where, beginning in 2004, all birds observed caught were identified at least to genus and most to species. The project also worked to improve the estimation of incidental catch of the pelagic longline fleet based on observer reports of seabird interactions and allowed for preparation of the U.S. National Report on Seabird Bycatch of the Western North Atlantic U.S. Pelagic Longline Fishery for ICCAT. Figure 4.5 provides extrapolated estimates of incidental seabird catch in U.S. Atlantic longline fisheries, which includes the Gulf of Mexico and Western North Atlantic fisheries.

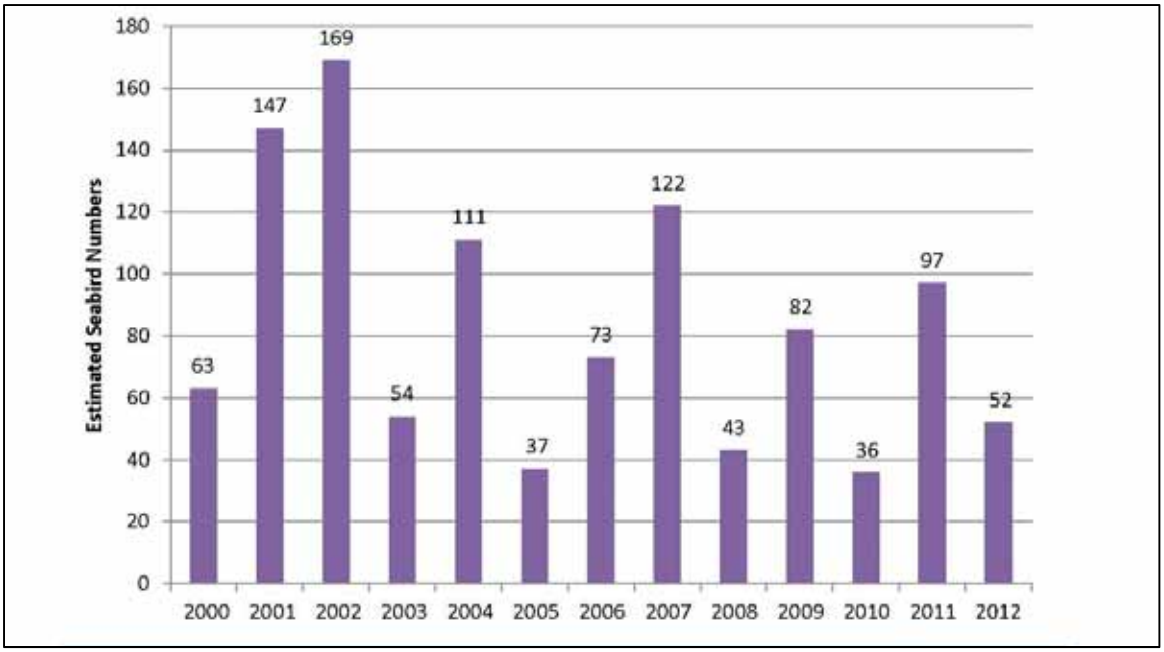

Figure 4.5 Incidental Seabird Catch in Atlantic Longline Fisheries

Source: Li, Y. and Y. Jiao, 2014.

Protected Species – Reinitiation of ESA Section 7 Consultation on the Atlantic PLL Fishery

On March 31, 2014, NMFS requested reinitiation of Section 7 consultation under the Endangered Species Act (ESA) on the Atlantic pelagic longline fishery. Despite sea turtle takes that were lower than specified in the ITS, leatherback mortality rates and total mortality levels had exceeded the level specified in the reasonable and prudent alternatives (RPAs) in the 2004 biological opinion. Additionally, new information has become available about leatherback and loggerhead sea turtle populations and sea turtle mortality. While the mortality rate measure will be re-evaluated during consultation, the overall ability of the RPA to avoid jeopardy is not affected, and NMFS is continuing to comply with the terms and conditions of the RPA and RPMs pending completion of consultation. NMFS also has confirmed that there will be no irreversible or irretrievable commitment of resources that would foreclose the formulation or implementation of any reasonable and prudent alternative measures pending completion of consultation, consistent with section 7(d) of the Act.

On July 3, 2014, NMFS issued the final determination to list the Central and Southwest Atlantic Distinct Population Segment (DPS) of scalloped hammerhead shark (*Sphyrna lewini*) as threatened species pursuant to the ESA. On August 27, 2014, NMFS published a final rule to list the following 20 coral species as threatened: five in the Caribbean including Florida and the Gulf of Mexico (*Dendrogyra cylindrus*, *Orbicella annularis*, *O. faveolata*, *O. franksi*, and *Mycetophyllia ferox*); and 15 in the Indo-Pacific (*Acropora globiceps*, *A. jacquelineae*, *A. lokani*, *A. pharaonis*, *A. retusa*, *A. rudis*, *A. speciosa*, *A. tenella*, *Anacropora spinosa*, *Euphyllia paradivisa*, *Isopora crateriformis*, *Montipora australiensis*, *Pavona diffluens*, *Porites napopora*, and *Seriatopora aculeata*). Additionally, in that August 2014 rule, two species that had been

previously listed as threatened (*A. cervicornis* and *A. palmata*) in the Caribbean were found to still warrant listing as threatened.

The Central and Southwest Atlantic DPS of scalloped hammerhead sharks and seven Caribbean species of corals have been determined to occur within the management area of Atlantic HMS fisheries. Therefore, on October 30, 2014, NMFS requested reinitiation of ESA section 7 consultation on the continued operation and use of several HMS gear types (bandit gear, bottom longline, buoy gear, handline, and rod and reel) and associated fisheries management actions in the 2006 Consolidated Atlantic HMS FMP and its amendments.

With regard to the ongoing reinitiation of ESA section 7 consultation on the Atlantic PLL fishery, NMFS asked that the information in the document evaluating the effects of HMS fishery interactions with the central and southwest Atlantic DPS of scalloped hammerhead shark and the seven threatened coral species also be used to supplement the ongoing PLL consultation. This will most effectively evaluate the effects of the PLL fishery on all listed species in the action area. A new Atlantic PLL fishery biological bpinion is anticipated in the future.

4.1.3 International Issues and Catch

Highly Migratory Species

The U.S. PLL fleet represents a small fraction of the international PLL fleet that competes on the high seas for catches of tunas and swordfish. In recent years, the proportion of U.S. PLL landings of HMS, for the fisheries in which the United States participates, has remained relatively stable in proportion to international landings. Historically, the U.S. fleet has accounted for less than 0.5 percent of the landings of swordfish and tuna from the Atlantic Ocean south of 5° N. Lat. and does not operate at all in the Mediterranean Sea. Tuna and swordfish landings by foreign fleets operating in the tropical Atlantic and Mediterranean are greater than the catches from the north Atlantic area where the U.S. fleet operates. Within the area where the U.S. longline fleet operates, U.S. longline landings still represent a limited fraction of total landings. In recent years (2004 - 2013), U.S. longline landings have averaged 5.0 percent of total Atlantic longline landings, ranging from a high of 6.9 percent in 2012 to a low of 4.2 percent in 2010. Table 4.13 contains aggregate longline landings of HMS, other than sharks, for all countries in the Atlantic for the period 2004 – 2013.

Table 4.13 Estimated International Longline Landings (mt ww) of HMS (Excluding Sharks) for All Countries in the Atlantic (2004-2013)

Species (Region)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Swordfish (N. Atl + S. Atl)	24,205	24,765	24,778	26,806	22,343	23,703	23,179	22,909	23,546	19,108
Yellowfin tuna (W. Atl)[2]	16,019	14,449	14,249	13,557	13,192	12,660	13,095	10,521	12,146	10,919
Bigeye tuna	48,396	38,035	34,182	46,232	41,063	43,985	42,925	38,211	38,679	31,727
Bluefin tuna (W. Atl.)[2]	644	425	565	420	606	366	529	743	478	474
Albacore tuna (N. Atl + S. Atl)	21,652	19,888	22,963	18,324	15,865	14,732	17,390	20,111	21,605	20,157
Skipjack tuna (W. Atl)[2]	206	207	286	52	49	20	30	41	96	650
Blue marlin (N. Atl. + S. Atl.)[3]	1,911	2,065	1,827	2,503	2,584	2,337	2,053	1,613	1,500	710
White marlin (N. Atl. + S. Atl.)[3]	685	594	374	554	532	558	363	336	347	238
Sailfish (W. Atl.)[4]	754	1,065	651	838	1,038	975	662	704	730	320
Total International longline landings[6]	114,472	101,493	99,875	109,286	97,272	99,336	100,226	95,189	99,127	84,303
Total U.S. longline landings[5]	5,638	4,652	4,799	5,540	4,446	5,315	4,238	5,111	6,802	5,322
U.S. landings as a percent of total International landings	4.9	4.6	4.8	5.1	4.6	5.3	4.2	5.4	6.9	6.3

[1] Landings include those classified by the SCRS as longline landings. [2] Note that the United States has not reported participation in the E. Atl yellowfin tuna fishery since 1983 and has not participated in the E. Atl bluefin or the E. Atl skipjack tuna fishery since 1982. [3] Includes U.S. dead discards and Brazilian live discards. [4] Includes U.S. dead discards. [5] From U.S. National Reports to ICCAT, 2005-2014. Includes swordfish, blue marlin, white marlin, and sailfish longline discards. [6] From SCRS, 2014. Sources: U.S. ICCAT National Reports 2005 – 2014; SCRS, 2014.

Atlantic Sharks

Stock assessments and data collection for international shark fisheries have improved in recent years due to increased reporting requirements adopted by ICCAT. Since 2004, there have been several shark-related Recommendations and Resolutions (e.g., 04-10, 06-10, 07-06, 08-07, 08-08, 09-07, 10-06, 10-07, and 11-08, 12-05). Additionally, SCRS has assessed several species of sharks including blue, shortfin mako, and porbeagle sharks. For more information on ICCAT shark actions, see previous SAFE reports and the ICCAT webpage (http://www.iccat.int/en/). Table 4.14 provides the most recent catch totals for blue, shortfin mako, and porbeagle sharks.

Table 4.14 Estimated International Longline Landings (mt ww)[1] of Pelagic Sharks for All Countries in the Atlantic (2004-2013)

Species (Region)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Blue shark (N. Atl + S. Atl + Med)	34,750	41,809	39,116	46,126	53,375	58,002	64,285	72,064	62,534	56,439
Shortfin mako (N. Atl + S. Atl + Med)	7,104	6,305	6,022	6,714	5,175	5,599	6,034	6,396	6,982	5,180
Porbeagle (N. Atl + S. Atl + Med)	745	572	508	525	611	484	137	89	149	188
Total International longline catches	42,599	48,686	45,646	53,365	59,161	64,085	70,456	78,549	69,665	61,807
U.S. blue shark catches[1]	72	68	47	55	138	107	176	271	162	263
U.S. shortfin mako catches[1]	521	469	386	382	354	385	394	392	430	417
U.S. porbeagle catches[1]	1	0	0	0	1	1	4	12	4	31
Total U.S. catches[1]	594	537	433	437	493	493	574	675	596	711
U.S. catches[1] as a percent of total International catch	1.4	1.1	0.9	0.8	0.8	0.8	0.8	0.9	0.9	1.1

[1]Includes catches and discards. Source: SCRS, 2014.

4.2 Purse Seine

4.2.1 Current Management

Purse seine gear consists of a floated and weighted encircling net that is closed by means of a drawstring, known as a purseline, threaded through rings attached to the bottom of the net. The efficiency of this gear can be enhanced by the assistance of spotter planes used to locate schools of tuna. Once a school is spotted, the vessel, with the aid of a smaller skiff, intercepts and uses the large net to encircle it. Once encircled, the purseline is pulled, closing the bottom of the net and preventing escape. The net is hauled back onboard using a powerblock, and the tunas are removed and placed onboard the larger vessel. Economic and social aspects of the fisheries are described in Chapter 5 of this report. A brief history of the Atlantic purse seine fishery and regulations is available in Amendment 7 to the 2006 Consolidated HMS FMP.

The bluefin tuna baseline percentage quota share for the Purse Seine category is 18.6 percent of the U.S. quota. The purse seine fishery is managed under a limited entry system with transferable individual vessel quotas (IVQs), excluding any new entrants into this category. Equal baseline quota allocations of bluefin tuna are assigned to individual fishery participants by regulation and those allocations are adjusted based on the individuals fishing activity in the previous year. The quotas are transferable among the five purse seine fishery participants or, as authorized under Amendment 7 to the 2006 Consolidated Atlantic HMS FMP, limited access pelagic longline permitted vessels provided they are eligible as specified in the Amendment.

Vessels participating in the Atlantic tunas purse seine fishery are required to target the larger size class bluefin tuna, more specifically the giant size class (≥ 81 inches) and are granted

a tolerance limit for large medium size class bluefin tuna (73 to < 81 inches) (i.e., large medium catch may not exceed 15 percent by weight of the total amount of giant bluefin tuna landed during a season). Currently, these vessels may commence fishing starting between June 1 and August 15, with NMFS establishing the start date via an annual notice each year and may continue through December 31, provided the vessel has not fully attained its IVQ. Over the last few years, the Purse Seine category has not fully harvested its allocated bluefin tuna quota. In 2008, 2010, and 2011, the Purse Seine category did not harvest any Atlantic tunas (Table 4.15).

4.2.2 Recent Catch and Landings

Table 4.15 shows purse seine landings of Atlantic tunas from 2005 through 2013. Purse seine landings historically have made up approximately 20 percent of the total annual U.S. landings of bluefin tuna (about 25 percent of total commercial landings), but recently only account for a small percentage. In the 1980s and early 1990s, purse seine landings of yellowfin tuna were often over several hundred metric tons. Over 4,000 mt ww of yellowfin were recorded landed in 1985. Over the past 15 years, via informal agreements with other sectors of the tuna industry, the purse seine fleet has opted not to direct any effort on HMS other than bluefin tuna; therefore, Table 4.15 only includes bluefin tuna.

Table 4.15 Domestic Atlantic Tuna Landings (mt ww) for the Purse Seine Fishery in the Northwest Atlantic Fishing Area (2005-2013)

Species	2005	2006	2007	2008	2009	2010	2011	2012	2013
Bluefin tuna	178.3	3.6	27.9	0.0	11.4	0.0	0.0	1.7	29.0

Source: NMFS, 2014.

4.2.3 International Issues and Catch

The U.S. purse seine fleet has historically accounted for a small percentage of the total international Atlantic tuna landings. Table 4.16 shows that since 2005, the U.S. purse seine fishery has contributed to less than 0.10 percent of the total purse seine landings reported to ICCAT. In Recommendation 10-10, ICCAT established a minimum standard for scientific fishing vessel observer programs and adopted a minimum of 5% observer coverage of fishing effort in the purse seine fishery, as measured in number of sets or trips.

Table 4.16 Estimated International Atlantic Tuna Landings (mt ww) for the Purse Seine Fishery in the Atlantic and Mediterranean (2005-2013)

Tuna Species	2005	2006	2007	2008	2009	2010	2011	2012	2013
Bluefin	23,524	20,356	22,980	12,641	9,479	4,985	4,293	6,096	8,098
Yellowfin	61,410	62,761	52,733	70,047	77,757	74,172	69,802	70,716	65,917
Skipjack	89,704	71,215	81,335	73,080	84,494	125,467	149,307	157,666	182,877
Bigeye	18,595	16,457	17,553	15,536	22,658	23,769	27,544	21,469	22,868
Albacore	949	3,432	1,289	169	259	213	192	586	184
Total	194,182	174,221	175,890	171,473	194,659	228,606	251,138	256,533	279,944
U.S. total	178	4	28	0	11	0	0	2	29
U.S. percentage	0.09	< 0.01	0.02	0	< 0.01	0	0	< 0.01	< 0.01

Source: SCRS, 2014.

4.3 Commercial Handgear

4.3.1 Current Management

Commercial handgears, including handline, harpoon, rod and reel, buoy gear and bandit gear, are used to fish for Atlantic HMS on private vessels, charter vessels, and headboat vessels. Rod and reel gear may be deployed from a vessel that is anchored, drifting, or underway (trolling). In general, trolling consists of dragging baits or lures through, on top of, or even above the water's surface. While trolling, vessels often use outriggers to assist in spreading out or elevating baits or lures and to prevent fishing lines from tangling. Buoy gear is discussed in detail in Section 4.6.

The handgear fisheries for all HMS are typically most active during the summer and fall, although in the South Atlantic and Gulf of Mexico, fishing occurs during the winter months. Fishing usually takes place between eight and two hundred km from shore and for those vessels using bait, the baitfish typically includes herring, mackerel, whiting, mullet, menhaden, ballyhoo, butterfish, and squid. The commercial handgear fishery for bluefin tuna occurs mainly in New England, and more recently off the coast of southern Atlantic states, such as Virginia, North Carolina, and South Carolina, with vessels targeting large medium and giant bluefin tuna. Figure 4.6 shows bluefin tuna commercial landings, which are predominately handgear landings, in metric tons by geographic region (Gulf of Mexico, South Atlantic, Mid-Atlantic, and Northeast). The South Atlantic region ends at Cape Hatteras, and the Mid-Atlantic region ends at eastern Long Island (New York). Commercial landings declined from peak in 2001 until 2007, increased from 2007 through 2010, decreased slightly in 2011and in 2012, and declined in 2013. Targeting bluefin tuna in the Gulf of Mexico is prohibited. The majority of U.S. commercial handgear fishing activities for bigeye, albacore, yellowfin, and skipjack tunas take place in the northwest Atlantic. Beyond these general patterns, the availability of Atlantic tunas at a specific location and time is highly dependent on environmental variables that fluctuate from year to year.

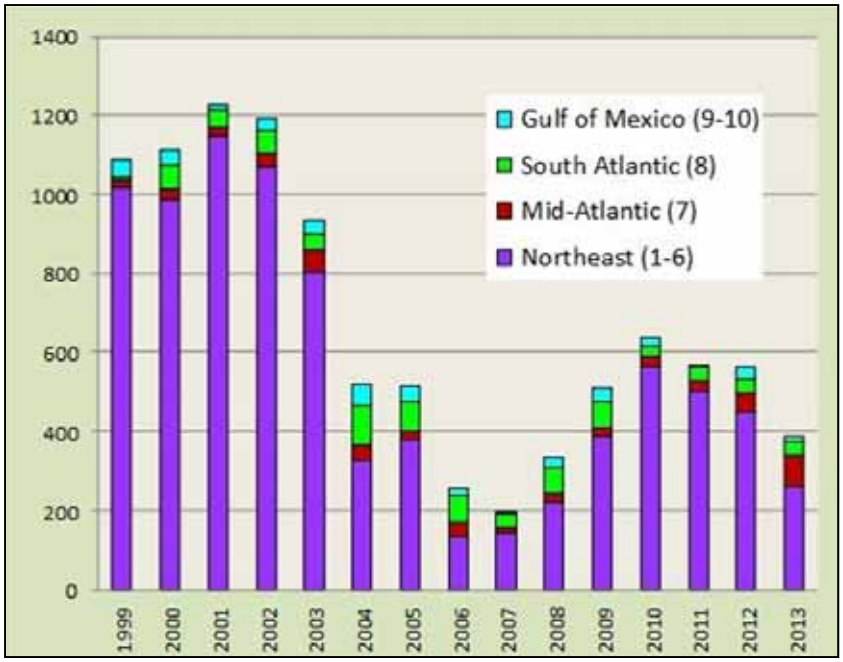

Figure 4.6 U.S. Atlantic and Gulf of Mexico Commercial Bluefin Tuna Landings by Geographic Area (1999 – 2013)

Source: NMFS Commercial BFT Landings Database.

The U.S. Atlantic tuna commercial handgear fisheries are currently managed through an open access vessel permit program. Vessels that wish to sell their Atlantic tunas must obtain a permit in one of the following categories: General (handgear including rod and reel, harpoon, handline, bandit gear, and green-stick), Harpoon (harpoon only), or Charter/Headboat (rod and reel, handline, bandit gear, and green-stick). These federally-permitted vessels may also need permits from the states they operate from in order to land and sell their catch, and are encouraged to check with their local state fish/natural resource management agency regarding these requirements. Federally-permitted vessels are required to sell Atlantic tunas only to federally-permitted Atlantic tunas dealers. Because the Atlantic tunas dealer permits are issued by the Greater Atlantic Region Permit Office, vessel owner/operators are encouraged to contact the permitting office directly, either by phone at (978) 281-9438 or online at http://www.nero.noaa.gov/ro/doc/vesdata1.htm, to obtain a list of permitted dealers in their area.

Vessels that are permitted in the General and Charter/Headboat categories fish commercially under the General category rules and regulations. For instance, vessels that possess either of the two permits mentioned above have the ability to retain an Agency-specified daily bag limit of one to five bluefin tuna (measuring 73 inches or greater curved fork length per vessel per day while the General category bluefin tuna fishery is open). The General category bluefin tuna fishery opens on January 1 of each year and remains open until either the General category quota allocation has been caught, or until March 31, whichever comes first. The fishery then reopens on June 1 and remains open until December 31 or until the quota is filled. Vessel owners/operators should check with the agency online (http://www.hmspermits.com) or via telephone information lines (888-872-8862) to verify the bluefin tuna retention limit on any given day. In accordance with the fishery management plan, the General category receives

approximately 47 percent of the U.S. bluefin tuna quota. A brief history of the General category fishery in the United States is available in Amendment 7 to the 2006 Consolidated HMS FMP.

Vessels that are permitted in the Harpoon category fish under the Harpoon category rules and regulations. For instance, regarding bluefin tuna, vessels have the ability to keep four bluefin tuna measuring 73 inches to less than 81 inches curved fork length ("large medium") per vessel trip per day while the fishery is open. There is no limit on the number of bluefin tuna that can be retained measuring longer than 81 inches curved fork length ("giant"), as long as the Harpoon category season is open. The Harpoon category season also opens on June 1 of each year and remains open until November 15, or until the quota is filled. The Harpoon category bluefin tuna quota is approximately 3.9 percent of the U.S. quota. A brief history of the harpoon fishery in the United States is available in Amendment 7 to the 2006 Consolidated HMS FMP.

A commercial swordfish fishery utilizing handgear (especially buoy-gear) exists primarily off the east coast of Florida, but also occurs in other locations of the Atlantic, Gulf of Mexico, and U.S. Caribbean. For information regarding the commercial buoy gear fishery, refer to Section 4.6.

On August 21, 2013, NMFS established a new commercial fishing vessel permit (the Swordfish General Commercial permit) that allows permit holders to retain and sell a limited number of swordfish caught on rod and reel, handline, harpoon, green-stick, or bandit gear. The HMS Charter/Headboat permit regulations were also modified to allow for the commercial retention of swordfish on non-for-hire trips, and regional swordfish retention limits were implemented for the new and modified permits, along with gear authorizations, and reporting requirements. The new and modified permits became available in November 2013 for the 2014 fishing year.

The shark commercial handgear fishery plays a very minor role in contributing to the overall shark landing statistics. For information regarding the shark fishery, refer to Sections 4.4 and 1.2. Economic and social aspects of all the domestic handgear fisheries are described in Chapter 5.

4.3.2 Recent Catch and Landings

The proportion of domestic HMS landings harvested with handgear varies by species, with Atlantic tunas comprising the majority of commercial landings. Commercial handgear landings of all Atlantic HMS (other than sharks) in the United States are shown in Table 4.17. In 2013, bluefin tuna commercial handgear landings accounted for approximately 57 percent of the total U.S. bluefin tuna landings and 76 percent of commercial bluefin tuna landings. Figure 4.7 shows the U.S. Atlantic bluefin tuna landings in metric tons by category since 1997. Note that the commercial handgear landings are comprised of bluefin tuna landed by both the general and harpoon categories.

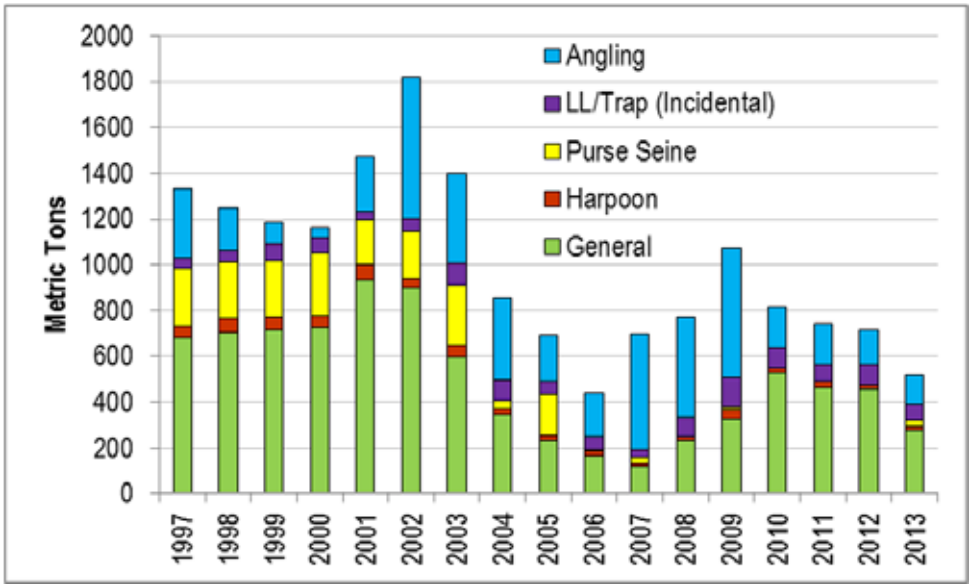

Figure 4.7 Landings of Bluefin Tuna by Category (1997 – 2013)

Source: NMFS Commercial BFT Landings Database.

Also in 2013, four percent of the total yellowfin catch, or six percent of the commercial yellowfin catch, was attributable to commercial handgear. Commercial handgear landings of skipjack tuna accounted for approximately one percent of total skipjack landings, or about 46 percent of commercial skipjack landings. For albacore, commercial handgear landings accounted for approximately less than one percent of total albacore landings, and less than one percent of commercial albacore landings. Commercial handgear landings of bigeye tuna accounted for approximately three percent of total bigeye landings and four percent of total commercial bigeye landings. Updated landings for the commercial handgear fisheries by gear and by area for 2005 – 2013 are presented in the following tables.

Table 4.17 U.S. Atlantic Commercial Handgear Landings of Tunas and Swordfish (mt ww) by Gear Type (2005-2013)

Species	Gear	2005	2006	2007	2008	2009	2010	2011	2012	2013
Bluefin tuna	Rod and Reel	226.6	164.1	120.8	226.6	301.7	515.1	418.6	419.5	249.5
	Handline	2.3	0.3	0.0	0.6	0.1	2.7	0.9	1.3	0.5
	Harpoon	31.5	30.3	22.5	30.2	65.6	29.0	70.1	52.3	45.0
	Total	260.4	194.7	143.3	257.4	367.4	546.8	489.6	473.1	295.0
Bigeye tuna	Troll	0.0	0.0	0.9	0.8	0.6	0.0	0.1	0.2	5.0
	Handline	6.3	21.5	16.8	6.6	4.6	1.8	3.4	7.9	16.1
	Total	6.3	21.5	17.7	7.4	5.2	1.8	3.5	8.0	21.1
Albacore tuna	Troll	0.0	0.0	0.2	0.2	0.07	0.04	0.0	0.0	0.2
	Handline	4.2	2.6	5.4	0.2	0.5	1.9	1.7	0.6	0.0
	Total	4.2	2.6	5.6	0.4	0.57	1.94	1.7	0.6	0.2
Yellowfin tuna	Troll	0.0	0.0	6.9	2.4	5.4	1.2	0.5	0.3	23.5
	Handline	160.3	105.1	113.2	30.1	58.7	43.5	34.0	66.0	67.4
	Total	160.3	105.1	120.1	32.5	64.1	44.7	34.5	66.3	90.9
Skipjack tuna	Troll	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Handline	11.8	0.2	0.3	0.4	2.8	1.2	1.5	2.0	1.2
	Total	11.8	0.2	0.3	0.4	2.8	1.2	1.5	2.0	1.2
Swordfish	Handline	34.7	32.5	125.2	83.2	123.0	126.9	120.4	151.3	104.6
	Harpoon	0.0	0.3	0.0	0.0	0.05	0.6	0.6	0.3	0.5
	Total	34.7	32.8	125.2	83.2	123.05	127.5	121.0	154.5	105.1

Source: NMFS, 2014.

Table 4.18 U.S. Atlantic Commercial Handgear Landings of Tunas and Swordfish (mt ww) by Region (2005-2013)

Species	Region	2005	2006	2007	2008	2009	2010	2011	2012	2013
Bluefin tuna	NW Atl	260.4	194.7	143.3	257.3	366.3	546.8	489.6	473.1	295.0
Bigeye tuna	NW Atl	6.2	21.5	16.8	6.9	4.6	1.8	3.4	7.9	16.1
	GOM	0.1	1.5	1.01	0.0	0.07	1.8	0.0	0.0	0.0
	Caribbean	0.0	0.0	0.0	0.0	0.0	0.0	0.05	0.0	0.0
Albacore tuna	NW Atl	3.0	2.6	5.4	0.2	0.5	1.9	0.7	0.6	0.0
	GOM	0.1	0.07	0.0	0.0	0.01	0.0	0.0	0.0	0.0
	Caribbean	1.1	0.4	0.2	0.4	0.003	0.05	0.1	0.4	2.3
Yellowfin tuna	NW Atl	105.1	105.1	113.2	30.1	58.7	43.5	34.0	66.0	67.4
	GOM	45.5	49.9	26.2	11.2	21.6	2.9	8.7	17.5	6.8
	Caribbean	9.7	7.8	9.1	3.7	3.3	1.9	1.5	3.2	0.0
Skipjack tuna	NW Atl	0.9	0.2	0.3	0.4	2.8	1.2	1.5	2.0	1.2
	GOM	0.0	0.0	0.2	0.06	0.2	0.02	0.2	0.06	0.02
	Caribbean	12.9	10.0	13.7	16.0	8.8	6.2	6.6	4.0	0.0
Swordfish	NW Atl	34.4	32.8	125.2	83.2	123.05	126.9	120.4	151.6	105.1
	GOM	0.3	0.1	0.2	1.2	1.9	2.6	0.5	3.3	0.5

Source: NMFS, 2014.

Handgear Trip Estimates

Table 4.19 displays the estimated number of rod and reel and handline trips targeting large pelagic species (e.g., tunas, billfishes, swordfish, sharks, wahoo, dolphin, and amberjack) from Maine through Virginia, in 2003 through 2013. The trips include commercial and recreational trips, and are not specific to any particular species. It should be noted that the 2013 estimates are preliminary and subject to change.

Table 4.19 Estimated Number of Rod and Reel and Handline Trips Targeting Atlantic Large Pelagic Species, by State (ME-VA, 2004-2013)

	AREA							
Year	NH/ME	MA	CT/RI	NY	NJ (North)	NJ (South) and MD/DE	VA	Total
Private Vessels								
2004	2,025	10,033	3,491	11,525	3,632	22,433	4,406	57,545
2005	4,607	12,052	7,603	8,051	2,446	19,759	4,631	59,148
2006	3,303	24,951	5,430	11,114	3,043	19,187	5,274	72,302
2007	5,929	25,139	6,020	6,809	5,875	17,712	5,012	72,496
2008	3,873	19,157	3,546	7,587	3,099	15,807	3,081	56,150
2009	4,724	27,066	2,670	8,274	3,633	15,458	4,299	66,122
2010	6,102	19,679	2,276	6,737	3,898	12,493	2,591	53,776
2011	6,931	20,227	2,175	5,480	4,549	12,109	2,630	54,101
2012	8,408	19,096	6,189	6,425	5,447	13,682	2,445	61,692
2013	7,100	12,883	2,366	6,648	4,104	11,519	2,187	46,807
Charter Vessels								
2004	312	2,021	1,564	2,285	1,094	5,080	1,579	13,935
2005	329	2,397	551	2,033	1,024	3,476	763	10,573
2006	96	1,294	677	1,057	891	3,452	828	8,296
2007	789	4,073	1,141	1,445	1,420	4,579	610	14,057
2008	892	3,295	751	1,525	1,026	4,340	370	12,199
2009	568	4,930	726	1,677	1,142	3,348	534	12,923
2010	917	3,581	549	1,432	1,111	2,679	511	10,780
2011	1,318	4,339	322	2,019	1,279	3,685	774	13,736
2012	1,570	4,248	465	1,211	1,437	2,910	619	12,462
2013	868	3,181	999	1,010	1,113	2,763	399	10,333

Source: Large Pelagics Survey.

4.4 Recreational Handgear

The following section describes the recreational portion of the handgear fishery with a primary focus on rod and reel fishing.

4.4.1 Current Management

Most Atlantic HMS are targeted by domestic recreational fishermen using a variety of handgear including rod and reel gear. Since 2003, recreational fishing for any HMS-managed

species requires an HMS Angling permit (67 FR 77434, December 18, 2002), and all non-tournament recreational landings of Atlantic marlins, roundscale spearfish, sailfish, and swordfish must be reported. Additionally, all HMS fishing tournaments are required to register with NMFS at least four weeks prior to the commencement of tournament fishing activities. If selected, tournament operators are required to report the results of their tournament to the NMFS Southeast Fisheries Science Center. All billfish and swordfish tournaments are selected for reporting. For more information on recreational HMS handgear fisheries, please see the 2006 Consolidated HMS FMP and the 2011 HMS SAFE Report.

4.4.2 Recent Catch, Landings, and Bycatch

The recreational landings database for Atlantic HMS consists of information obtained through surveys including the Marine Recreational Information Program (MRIP), Large Pelagics Survey (LPS), Southeast Headboat Survey (HBS), Texas Headboat Survey, Recreational Billfish Survey (RBS) tournament data, and the HMS Recreational Reporting Program (non-tournament swordfish, billfishes, and bluefin tuna). Descriptions of these surveys, the geographic areas they include, and their limitations are discussed in the 2006 Consolidated HMS FMP and previous HMS SAFE Reports.

Tuna and swordfish landings for HMS recreational rod and reel fisheries are presented below in Table 4.20 from 2004 through 2013.

Table 4.20 Domestic Landings (mt ww)* for the Atlantic Tunas and Swordfish Recreational Rod and Reel Fishery (2004-2013)

Species	Region	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Bluefin tuna*	NW Atlantic	370.2	254.4	158.2	398.6	352.2	143.3	111.4	173.3	148.7	131.4
	GOM	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total	370.2	254.4	158.8	398.6	352.2	143.3	111.4	173.3	148.7	131.4
Bigeye tuna**	NW Atlantic	94.6	165.0	422.3	126.8	70.9	77.6	116.8	72.4	269.6	337.5
	GOM	6.0	0.0	24.3	0.0	0.0	0.0	0.8	34.9	0.1	7.0
	Caribbean	<0.1	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0
	Total	100.6	165.0	446.6	126.8	70.9	77.6	117.6	109.6	269.7	344.5
Albacore**	NW Atlantic	500.5	356.0	284.2	393.6	125.2	22.8	46.2	170.6	144.3	340.3
	GOM and Caribbean	0.0	0.0	0.0	0.0	0.0	0.0	103.4	0.0	0.7	0.0
	Total	500.5	356.0	284.2	393.6	125.2	22.8	149.6	170.6	145.0	340.3
Yellowfin tuna**	NW Atlantic	3,433.7	3,504.8	4,649.2	2,726.0	657.1	742.6	1,209.0	1,134	1,433	495.4
	GOM	247.1	146.9	258.4	227.6	366.3	264.7	18.0	362.8	294.1	191.8
	Caribbean	0.0	0.0	0.0	12.4	0.0	3.5	4.5	0.9	0.0	0.0
	Total	3,684.8	3,651.7	4,907.6	2,966.0	1,023.4	1,010.8	1,231.5	1,497.7	1,721.1	687.2
Skipjack tuna**	NW Atlantic	27.3	8.1	34.6	27.4	21.0	75.7	29.1	50.3	98.0	37.7
	GOM	6.3	3.1	6.4	23.9	16.3	22.0	15.5	23.7	2.5	77.1
	Caribbean	40.4	3.9	7.7	0.2	11.3	4.3	0.4	3.0	3.0	0.0
	Total	74.0	15.1	48.7	51.5	48.6	102.0	45.0	77.0	103.5	114.8
Swordfish	Total	25.2	61.2	52.7	68.2	75.7	31.6	49.3	53.6	70.8	22.0

* Rod and reel catch and landings estimates of bluefin tuna < 73 in curved fork length (CFL) based on statistical surveys of the U.S. recreational harvesting sector. Rod and reel catch of bluefin tuna > 73 in CFL are commercial and may also include a few metric tons of "trophy" bluefin (recreational bluefin ≥ 73 in). ** Rod and reel catches and landings for Atlantic tunas represent estimates of landings and dead discards based on statistical surveys of the U.S. recreational harvesting sector. Sources: NMFS, 2005; NMFS, 2006; NMFS, 2007; NMFS, 2009; NMFS, 2010; NMFS, 2011; NMFS, 2012; and NMFS 2013.

Atlantic Billfish Recreational Fishery

Table 4.21 provides a summary of reported billfish and swordfish landings from 2009 through 2013. Due to the rare nature of billfish encounters and the difficulty of monitoring landings outside of tournament events, reports of recreational billfish landings are sparse; however, the Recreational Billfish Survey (RBS) provides a preliminary source for analyzing recreational billfish tournament landings ("Tournament" columns). Recreational report totals are developed from analysis of multiple datasets, including the HMS Recreational Reporting Program, the Large Pelagics Survey (LPS), Maryland and North Carolina Catch Cards, the RBS, and MRIP ("Non-Tournament" columns). In 2012, NMFS established a new accounting protocol that analyzes tournament and non-tournament landings reports of billfishes using all available programs (see sources in Table 4.21).

"Total landings of marlin and RSP" by year and "Balance Remaining (from 250 Marlin Limit)" rows summarize billfish monitoring as required under ICCAT and the Atlantic Tunas Convention Act. Under ICCAT Recommendation 06-09 and as specified in § 635.27(d)(1), the recreational billfish fishery is limited to maximum of 250 Atlantic blue and white marlin landings, combined, per year. Sailfish and swordfish are presented underneath the ICCAT accounting rows and do not count towards the 250 Marlin Limit.

Table 4.21 Atlantic HMS Recreational Billfish Landings, in Numbers of Fish (2009-2013)

Species	Recreational Reporting	2009	2010	2011	2012	2013
Blue Marlin	Tournament*	35	18	27	45	44
	Non-Tournament**	5	3	3	18	11
	Total***	44	28	43	63	55
White Marlin	Tournament*	46	63	31	23	34
	Non-Tournament**	6	5	6	7	15
	Total***	53	72	56	30	49
Roundscale Spearfish (RSP)	Tournament*	5	10	3	4	1
	Non-Tournament**	-	0	0	0	0
	Total***	5	19	7	4	1
Total Landings of Marlin and RSP		97	119	106	97	100
Balance Remaining (from 250 Marlin Limit)		153	131	144	153	150
Sailfish	Tournament*	0	3	7	21	2
	Non-Tournament**	140	185	166	163	171
	Total***	140	192	173	184	173
Swordfish	Tournament*	85	46	29	29	16
	Non-Tournament**	389	285	318	386	263
	Total	474	331	347	415	279

– Prior to 2010, RSP was not included in the 250 Marlin Limit. Sources: 2009-2011 for all billfishes (2009-2013 for swordfish): * RBS; ** HMS Recreational Reporting Program; *** RBS, HMS Recreational Reporting Program, MD and NC HMS Catch Cards, LPS, and MRIP. 2012-2013 for all billfishes (excludes swordfish): * RBS, MD and NC HMS Catch Cards, LPS, and MRIP; ** HMS Recreational Reporting Program, MD and NC HMS Catch Cards, LPS, and MRIP. *** Sum total of tournament and non-tournament reports.

All recreational, non-tournament landings of billfish, including swordfish, are required to be reported to NMFS within 24 hours of landing by the permitted owner of the vessel landing the fish. This requirement is applicable to all permit holders, both private and charter/headboat vessels, not fishing in a tournament. In Maryland and North Carolina, vessel owners are required to report their billfish landings through the submission of catch cards at state-operated landings stations.

Table 4.22 Tournament Landings of Billfishes by State or Area (2013)

State(s)	Tournaments	White Marlin	Blue Marlin	Sailfish	Roundscale Spearfish
MA/RI/NY	4	-	-	-	-
NJ	10	-	2	-	-
MD	9	34	3	-	1
NC	12	-	7	-	-
VA	4	-	-	-	-
SC	6	-	2	-	-
FL	54	-	9	-	-
AL/MS	15	-	10	-	-
LA	15	-	1	-	-
TX	18	-	6	2	-
PR	13	-	4	-	-
VI	8	-	-	-	-

Some states are aggregated to protect tournament reporting privacy if at least three tournaments were not held in one or more state(s). Sources: RBS, HMS Recreational Reporting Program, NC and MD HMS Catch Cards, LPS, and MRIP.

Shark Recreational Fishery

Unlike billfish or bluefin tuna, recreational shark landings are not required to be reported to NMFS unless an angler is required to participate in the LPS or MRIP. However, as of 2013, vessel owners in Maryland are required to report their shark landings on catch cards at state-operated landings stations.

Table 4.23 Number of Recreational Shark Landings Reported from the Maryland Catch Card Program (2013)

Species	2013
Atlantic sharpnose	13
Common thresher	8
Shortfin mako	47
Spinner	1
Total	69

Source: R. Salz, pers comm; MD DNR, 2014.

The following tables provide estimated recreational landings for each of the three shark species groups: large coastal sharks (Table 4.24 and Table 4.25), pelagic sharks (Table 4.26), and small coastal sharks (Table 4.27 and Table 4.28).

Table 4.24 Estimated Recreational Harvest of Large Coastal Sharks in the Atlantic Region, in Number of Fish per Species (2008-2013)

Species	2008	2009	2010	2011	2012	2013
Basking[2]	0	0	0	0	0	0
Bignose[1]	0	0	0	0	0	0
Bigeye sand tiger[2]	0	0	0	0	0	0
Blacktip	5,317	1,902	1,656	754	1,164	962
Bull	247	2	1	698	68	77
Caribbean reef[1]	0	0	0	0	0	0
Dusky[1]	1,501	506	4	23	15	16
Galapagos[1]	0	0	0	0	0	0
Hammerhead, great	3	5	0	0	37	0
Hammerhead, scalloped	1	569	13	179	4	248
Hammerhead, smooth	0	0	0	0	0	352
Hammerhead, unclassified	0	0	0	0	0	0
Lemon	1	291	0	14	0	0
Night[1]	0	0	0	0	0	0
Nurse	331	156	209	301	706	13
Sandbar[3]	4,210	6,461	2,193	1,125	857	365
Sand tiger[2]	1	0	0	0	0	0
Silky[3]	0	208	13	0	232	0
Spinner	0	179	693	679	1,145	390
Tiger	4	4	2	1	2	8
Whale[2]	0	0	0	0	0	0
White[2]	0	0	0	0	0	0
Requiem shark, unclassified	11,541	8,794	2,966	4,949	6,069	97
Total	23,157	19,077	7,750	8,723	10,299	2,528

[1]Prohibited in the recreational fishery as of July 1, 1999. [2]Prohibited as of April 1997. [3]Prohibited as of July 2008.
Source: Cortés pers. comm.

Table 4.25 Estimated Recreational Harvest of Large Coastal Sharks in the Gulf of Mexico Region, in Number of Fish per Species (2008-2013)

Species	2008	2009	2010	2011	2012	2013
Basking[2]	0	0	0	0	0	0
Bignose[1]	0	0	0	0	0	0
Bigeye sand tiger[2]	0	0	0	0	0	0
Blacktip	9,283	12,600	23,781	16,083	22,530	105,315
Bull	964	6,957	260	581	2,415	2,786
Caribbean reef[1]	0	1	0	0	0	0
Dusky[1]	58	40	87	125	42	20
Galapagos[1]	0	0	0	0	0	0
Hammerhead, great	10	123	3	126	5	7
Hammerhead, scalloped	118	105	140	22	24	517
Hammerhead, smooth	0	0	0	0	0	0
Hammerhead, unclassified	0	0	0	0	0	0
Lemon	1,065	3	781	1,274	0	0
Night[1]	0	22	0	0	0	55
Nurse	14	729	25	1,098	2	2
Sandbar[3]	211	701	883	200	46	1,404
Sand tiger[2]	0	0	0	0	0	0
Silky[3]	390	0	64	74	0	615
Spinner	3,111	2,461	6,040	1,694	4,975	6,022
Tiger	1	0	366	52	0	3
Whale[2]	0	0	0	0	0	0
White[2]	0	0	0	0	0	0
Requiem shark, unclassified	2,937	24,972	68,134	38,876	16,454	17,606
Total	18,162	48,714	100,564	60,205	46,493	134,352

[1]Prohibited in the recreational fishery as of July 1, 1999. [2]Prohibited as of April 1997. [3]Prohibited as of July 2008.
Source: Cortés pers. comm.

Table 4.26 Estimated Recreational Harvest of Pelagic Sharks in the Atlantic and Gulf of Mexico, in Number of Fish per Species (2008-2013)

Species	2008	2009	2010	2011	2012	2013
Bigeye thresher*	0	0	0	0	0	0
Bigeye sixgill*	0	0	0	0	0	0
Blue Shark	87	0	1,512	0	0	2,582
Mako, longfin*	0	0	0	0	0	0
Mako, shortfin	1,087	5,271	3,297	301	689	6,855
Mako, unclassified	0	0	0	396	14	36
Oceanic whitetip	0	0	0	0	0	0
Porbeagle	0	0	0	19	0	0
Sevengill*	0	0	0	0	0	0
Sixgill*	0	0	0	0	0	0
Thresher	798	3,422	214	0	0	0
Pelagic shark, unclassified	0	0	0	0	0	0
Total	1,972	8,693	5,023	716	703	9,473

*Prohibited in the recreational fishery as of July 1, 1999. Source: Cortés, pers. comm.

Table 4.27 Estimated Recreational Harvest of Small Coastal Sharks in the Atlantic Region, in Number of Fish per Species (2008-2013)

Species	2008	2009	2010	2011	2012	2013
Atlantic angel*	0	0	0	0		0
Blacknose	2	947	0	573	0	70
Bonnethead	12,225	8,009	10,073	8,598	9,798	14,375
Finetooth	1,347	0	239	0	0	0
Atlantic sharpnose	33,489	33,568	41,217	28,252	23,207	44,832
Caribbean sharpnose*	0	0	0	0	0	0
Smalltail*	0	0	0	0	0	0
Total	47,063	42,524	51,529	37,423	33,005	59,277

*Prohibited in the recreational fishery as of July 1, 1999. Source: Cortés, pers. comm.

Table 4.28 Estimated Recreational Harvest of Small Coastal Sharks in the Gulf of Mexico Region, in Number of Fish per Species (2008-2013)

Species	2008	2009	2010	2011	2012	2013
Atlantic angel*	0	0	0	0	0	0
Blacknose	2,468	5,276	1,463	1,533	2,638	232
Bonnethead	8,939	14,189	6,084	51,714	6,746	7,757
Finetooth	665	395	380	47	248	239
Atlantic sharpnose	38,927	31,237	29,494	19,072	40,302	45,616
Caribbean sharpnose*	0	0	0	0	0	0
Smalltail*	0	0	0	0	0	0
Total	50,999	51,097	37,421	72,366	49,934	53,844

*Prohibited in the recreational fishery as of July 1, 1999. Source: Cortés, pers. comm.

Bycatch Issues

Bycatch in the recreational rod and reel fishery is difficult to quantify because many fishermen simply value the experience of fishing and may not be targeting a particular species. The 1999 Billfish Amendment established a catch-and-release fishery management program for the recreational Atlantic billfish fishery. As a result of this program, all Atlantic billfish that are released alive, regardless of size, are not considered bycatch. The recreational white shark fishery is by regulation a catch-and-release fishery only, and white sharks are not considered bycatch.

Bycatch can result in death or injury to discarded fish; therefore, bycatch mortality is incorporated into fish stock assessments, and into the evaluation of management measures. The number of kept and released fish reported or observed through the LPS dockside intercepts for 2004 – 2013 is presented in Table 4.29 and Table 4.30.

An outreach program to address bycatch and to educate anglers on the benefits of circle hooks has been implemented by NMFS. In January 2011, NMFS developed and released a brochure that provides guidelines on how to increase the survival of hook-and-line caught large pelagic species. This brochure is available at: http://www.nmfs.noaa.gov/sfa/hms/compliance/guides/careful_release_brochure.pdf.

Table 4.29 Observed or Reported Number of HMS Kept in the Rod and Reel Fishery (ME-VA, 2004-2013)

Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
White marlin[2]	6	5	8	4	13	8	9	17	5	14
Blue marlin[2]	5	3	2	2	3	3	3	1	3	6
Sailfish[2]	0	1	0	1	0	0	0	0	0	0
Swordfish	9	22	27	42	30	7	9	27	28	15
Giant bluefin tuna[3]	50	48	15	15	20	46	54	51	65	37
Large medium bluefin tuna[3]	13	12	1	5	11	0	36	28	23	14
Small medium bluefin tuna	30	22	48	69	48	205	11	14	21	29
Large school bluefin tuna	291	179	171	298	398	107	174	77	73	97
School bluefin	927	638	84	314	228	180	201	180	146	104
Young school bluefin	16	25	0	3	4	1	2	0	2	1
Bigeye tuna	46	32	35	59	55	58	36	66	97	250
Yellowfin tuna	3,858	3,700	3,572	2,988	1,029	1,886	1,906	3,474	3,296	2,719
Skipjack tuna	197	79	104	34	64	242	151	278	200	109
Albacore	1,458	835	542	934	168	67	154	550	358	1,040
Thresher shark	58	45	34	62	59	66	44	41	39	31
Mako shark	216	99	111	143	169	159	159	172	151	179
Sandbar shark	7	1	1	9	1	1	0	1	0	0
Dusky shark	0	0	3	6	1	0	1	0	0	0
Tiger shark	0	1	0	1	1	3	1	0	2	0
Porbeagle	1	1	1	0	0	0	2	2	2	6
Blacktip shark	0	1	1	0	-	-	0	0	0	0
Atlantic sharpnose shark	0	0	0	0	-	-	10	5	3	22
Blue shark	74	67	61	109	43	54	26	30	28	12
Hammerhead shark	1	0	0	0	1	0	0	0	0	0
Smooth hammerhead	0	0	0	0	1	0	0	0	0	0
Scalloped hammerhead	0	0	1	0	0	0	0	0	0	0
Unidentified hammerhead	0	0	0	0	0	0	0	0	0	0
Wahoo	110	112	85	190	172	69	111	63	206	92
Dolphin	3,050	6,366	3,921	2,536	5,739	3,317	6,063	4,935	3,055	3,902
King mackerel	11	376	170	82	67	14	14	3	3	7
Atlantic bonito	410	96	262	283	51	138	57	41	79	77
Little tunny	231	181	90	195	93	175	239	151	172	84
Amberjack	0	2	1	5	31	81	99	25	40	37
Spanish mackerel	9	4	1	2	67	9	8	24	146	66

[1]NMFS typically expands these "raw" data to report discards of bluefin tuna by the rod and reel fishery to ICCAT. If sample sizes are large enough to make reasonable estimates for other species, NMFS may produce estimates for other species in future SAFE reports. [2]Amendment 1 to the Atlantic Billfish FMP established billfish released in the recreational fishery as a "catch-and-release" program, thereby exempting these fish from bycatch considerations. [3]Includes some commercial handgear landings. Source: Large Pelagics Survey.

Table 4.30 Observed or Reported Number of HMS Released in the Rod and Reel Fishery (ME-VA, 2004-2013)

Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
White marlin[2]	378	397	160	359	454	936	1,070	1,355	1,996	1,200
Blue marlin[2]	80	52	42	69	69	60	86	106	137	109
Sailfish[2]	2	6	3	1	6	69	11	11	61	15
Swordfish	22	23	52	40	45	13	15	27	12	18
Giant bluefin tuna[3]	3	0	3	0	0	0	1	0	0	2
Large medium bluefin tuna[3]	36	4	1	3	11	7	22	2	9	1
Small medium bluefin tuna	21	30	18	32	23	93	46	32	45	70
Large school bluefin tuna	107	141	85	99	286	77	172	53	64	87
School bluefin tuna[4]	1,297	1,917	290	347	358	173	392	345	184	135
Young school bluefin tuna[4]	1,885	282	117	83	55	52	68	44	21	14
Bigeye tuna	2	2	2	1	0	13	0	2	3	5
Yellowfin tuna[4, 5]	1,093	502	351	171	411	2,038	374	1,479	195	999
Skipjack tuna[4]	362	105	129	17	217	610	188	479	325	464
Albacore tuna	66	67	41	40	14	5	10	84	25	112
Thresher shark[5]	27	9	15	24	35	23	21	9	16	10
Mako shark	350	142	177	190	242	250	276	224	238	206
Sandbar shark	68	37	158	168	222	219	37	45	14	44
Dusky shark	60	49	73	87	128	152	116	84	76	90
Tiger shark	0	6	7	11	20	11	13	25	26	19
Porbeagle	1	6	8	2	2	6	11	31	18	22
Blacktip shark	1	19	9	31	-	-	34	10	346	89
Atlantic sharpnose shark	0	11	0	0	-	-	5	3	4	22
Blue shark[4, 5]	2,242	920	884	1,978	2,735	4,185	3,333	3,752	2,705	2,240
Hammerhead shark	2	5	0	0	0	0	0	1	2	0
Smooth hammerhead shark	0	0	1	2	0	1	1	3	3	0
Scalloped hammerhead shark	0	0	0	0	4	2	0	0	4	0
Unidentified hammerhead shark	0	0	11	14	27	31	32	10	30	20
Wahoo	5	7	6	9	4	4	6	2	5	2
Dolphin[5]	192	375	394	227	372	222	344	380	192	209
King mackerel	1	7	20	3	5	5	1	0	0	0
Atlantic bonito[4]	389	231	114	60	36	124	55	55	120	46
Little tunny	1,130	505	102	387	614	1,028	886	640	993	133
Amberjack	1	2	13	33	145	101	119	17	48	56
Spanish mackerel[4]	0	0	0	2	37	1	8	0	0	0

[1]NMFS typically expands these "raw" data to report discards of bluefin tuna by the rod and reel fishery to ICCAT. If sample sizes are large enough to make reasonable estimates for other species, NMFS may produce estimates for other species in future HMS SAFE Reports. [2]Amendment 1 to the Atlantic Billfish FMP established billfish released in the recreational fishery as a "catch-and-release" program, thereby exempting these fish from bycatch considerations. [3]Includes some commercial handgear landings. [4]Includes dead releases in 2010. [5]Includes dead releases in 2011. Source: Large Pelagics Survey.

4.5 Bottom Longline

Bottom longline (BLL) gear is the primary commercial gear employed for targeting large coastal sharks (LCS) in all regions. Small coastal sharks (SCS) are also caught on BLL. Gear characteristics vary by region and target species. In 2013, hauls targeting LCS used BLL consisting of a longline between 0.6 to 7.4 km (0.4 – 4.6 miles) long with 26-254 hooks attached and the average soak duration was 2.4 hours. Depending on the species being targeted, both circle and J hooks are used. Fishermen targeting LCS with BLL gear most commonly used 18.0 circle hook (75 percent of the time). Hauls targeting sandbar sharks used BLL consisting of longline average of 6.9 km (4.3 miles) long with 70-300 hooks attached and the average soak duration was 6 hours. The most commonly used hook was the 18.0 circle hook (61.3 percent) with 9.0 J hooks used 38.y percent of the hauls (Gulak et al., 2014).

4.5.1 Current Management

For a description of the history of bottom longline fishery management, please see the Amendment 5a to the 2006 Consolidated HMS FMP. Current commercial regulations include limited access vessel permits requirements, commercial quotas, vessel retention limits, a prohibition on landing 20 species of sharks (one of these species can be landed in the shark research fishery), numerous closed areas, gear restrictions, landing restrictions (including requiring all sharks be landed with fins naturally attached), fishing regions, vessel monitoring system requirements, dealer permits, and vessel and dealer reporting requirements.

NMFS is currently working on two additional shark proposals to amend the 2006 Consolidated HMS FMP, which could impact fishermen using BLL gear. Amendment 5b to the 2006 Consolidated HMS FMP could change certain shark regulations based on recent stock assessment for dusky sharks. Based on this determination and results of the SEDAR 34 assessment, NMFS intends to consider implementing total allowable catches (TAC) and commercial quotas for the non-blacknose SCS complexes in the Atlantic and Gulf of Mexico regions in a proposed rule for Amendment 6 to the 2006 Consolidated HMS FMP. The proposed rule could consider a range of other management measures for the commercial shark fisheries including modifying the commercial retention limits, implementing regional and sub-regional quotas in the Atlantic and Gulf of Mexico, and removing upgrading restrictions for shark directed permit holders.

4.5.2 Recent Catch, Landings, and Discards

This section provides information on shark landings, species composition, bycatch, and discards as reported in the shark BLL observer program. Since 2002, shark BLL vessels have been required to take an observer if selected. Participants in the shark research fishery are required to take an observer when targeting sandbar sharks. Outside the research fishery and depending on the time of year and fishing season, vessels that target sharks, possessed current valid directed shark permit, and reported fishing with longline gear in the previous year were randomly selected for coverage with a target coverage level of 2-3% for shark directed (Gulak et al., 2014).

In 2013, the BLL observer program selected 9 vessels with a total of 113 BLL hauls (defined as setting gear, soaking gear for some duration of time, and retrieving gear) were

observed in a total of 61 trips (defined as from the time a vessel leaves the port until the vessel returns to port and lands catch, including multiple hauls therein). Gear characteristics of trips varied by area (Gulf of Mexico or the U.S. Atlantic Ocean) and target species (non-sandbar LCS or sandbar shark) (Gulak et al., 2014). The selected observed trips were from two fishing regions: the southern Atlantic (refers to the coastline from North Carolina to Florida) and the Gulf of Mexico (refers to the coastline from the Florida Keys to Texas). The observed non-research shark fishery hauls targeted non-sandbar LCS species in the southern Atlantic. Only 7 trips with 20 hauls were observed. These trips caught mostly blacktip sharks with Atlantic sharpnose, finetooth, and spinner sharks being the next most caught species (Table 4.31).

Table 4.31 Shark Species Caught on Observed Bottom Longline Targeting Non-Sandbar Large Coastal Sharks in the Southern Atlantic (2013)

Species	Total Caught (%)	Kept (%)	Discarded Dead (%)	Discarded Alive (%)	Disposition Unknown (%)
Blacktip shark	151	88.1	10.6	0.0	1.3
Atlantic sharpnose shark	140	72.9	27.1	0.0	0.0
Finetooth shark	21	52.4	47.6	0.0	0.0
Spinner shark	15	100.0	0.0	0.0	0.0
Bull shark	12	100.0	0.0	0.0	0.0
Nurse shark	10	0.0	0.0	100.0	0.0
Tiger shark	5	20.0	0.0	80.0	0.0
Blacknose shark	3	33.3	66.7	0.0	0.0
Sandbar shark	3	0.0	33.3	66.7	0.0
Lemon shark	3	100.0	0.0	0.0	0.0
Sand tiger shark	1	0.0	0.0	100.0	0.0
Sharks	1	0.0	0.0	100.0	0.0
Scalloped hammerhead shark	1	0.0	100.0	0.0	0.0
Great hammerhead shark	1	0.0	0.0	100.0	0.0
Total	367				

Source: Gulak et al., 2014.

In 2013, the Shark Research Fishery commenced with 6 participants; however in April, another vessel was selected after a vessel withdrew from the fishery. Due to the number of observed vessels, the observed data were combined for the Gulf of Mexico and southern Atlantic to protect confidentiality of vessels consistent with the requirements of the MSA. NMFS changed the regulations for vessels participating in the shark research fishery in 2013 by implementing a regional dusky bycatch cap and revised the set limit per research trip (Table 4.32).

Table 4.32 Summary of Shark Research Fishery Management Measures (2011-2013)

Management Measure	2011	2012	2013
Number of Vessels	10	5	6
Number of Trips per Month	2-3	1	1
Captain's Meeting Held	No	Yes	Yes
Retention Limits	33 sandbar per trip 33 non-sandbar LCS per trip	None. All sharks, except for prohibited species, brought to vessel dead must be landed.	None. All sharks, except for prohibited species, brought to vessel dead must be landed.
Gear Restrictions	Hook restriction: ≤ 500 hooks per set	Set limit: one longline set per trip Hook restriction: ≤ 150 or fewer hooks on board *Amendment 1* Set limit: two non-concurrent longline sets per trip: 1st set ≤ 75 hooks; soak time no more than 2 hours; 2nd set ≤ 150 hooks; no soak time limit Hook restriction: ≤ 250 hooks on board *Amendment 2* Set limit: two non-concurrent longline sets per trip: 1st set ≤ 150 hooks; soak time no more than 2 hours; 2nd set ≤ 300 hooks; no soak time limit Hook restriction: ≤ 500 hooks on board	Set limit: two non-concurrent longline sets per trip: 1st set ≤ 150 hooks; soak time no more than 2 hours; 2nd set ≤ 300 hooks; no soak time limit Hook restriction: ≤ 500 hooks on board
Individual Vessel Quota	None. All landings counted towards the overall sandbar and LCS research quotas Sandbar: 87.9 mt dw Non-sandbar LCS: 37.5 mt dw	Sandbar quota and LCS research quota split equally among selected vessels Sandbar: 14.06 mt dw Non-sandbar LCS: 6.0 mt dw	Sandbar quota and LCS research quota split equally among selected vessels Sandbar: 15.5 mt dw Non-sandbar LCS: 6.7 mt dw
Mid-Atlantic Closed Area	Vessels could fish in the closed area	Vessels could fish in the closed area	Vessels could not fish in the closed area
Dusky Bycatch Cap	None	None	No more than five dusky shark interactions were allowed in any of the designated regions (North Carolina, Georgia/ South Carolina, east coast of Florida, the Florida Keys, west coast of Florida, and rest of the Gulf of Mexico) through the entire year (Figure 4.8)

Figure 4.8 Designed Regional Dusky Bycatch Cap Regions for the Shark Research Fishery

The Shark Research Fishery targeted sandbar sharks in the Gulf of Mexico and southern Atlantic. A total of 54 trips with 93 hauls were observed. These trips caught mostly sandbar sharks with tiger, blacktip, Atlantic sharpnose, and nurse sharks being the next most caught species (Table 4.33). All of the dusky sharks were observed on trips targeting sandbar sharks.

Table 4.33 Shark Species Caught on Observed Bottom Longline Trips Targeting Sandbar Shark in the Gulf of Mexico and Southern Atlantic (2013)

Species	Total Caught (#)	Kept (%)	Discarded Dead (%)	Discarded Alive (%)	Disposition Unknown (%)
Sandbar shark	1,748	98.2	0.2	0.1	1.5
Tiger shark	520	31.9	0.8	65.8	1.5
Blacktip shark	370	97.0	2.7	0.0	0.3
Atlantic sharpnose shark	250	28.4	64.8	6.8	0.0
Nurse shark	187	0.5	0.0	99.5	0.0
Bull shark	139	96.4	0.0	0.0	3.6
Blacknose shark	124	78.2	20.2	1.6	0.0
Great hammerhead shark	89	78.7	6.7	11.2	3.4
Scalloped hammerhead shark	77	87.0	3.9	9.1	0.0
Spinner shark	63	95.2	3.2	0.0	1.6
Lemon shark	40	97.5	0.0	0.0	2.5
Sand tiger shark	29	0.0	0.0	100.0	0.0
Dusky shark	24	4.2[1]	29.1	66.7	0.0
Silky shark	13	69.2	15.4	15.4	0.0
Hammerhead sharks	3	66.7	0.0	33.3	0.0
Bonnethead shark	2	50.0	0.0	50.0	0.0
Caribbean reef shark	1	0.0	100.0	0.0	0.0
Total	3,679				

[1] One dusky shark was initially identified as a silky shark. Source: Gulak et al., 2014.

4.5.3 Bottom Longline Bycatch

For more detailed information on the fishery classification and requirements under the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1361 *et seq.*) and the Endangered Species Act (ESA), please see the Final Environmental Impact Statement (FEIS) prepared for Amendment 5a to the 2006 Consolidated HMS FMP. On July 3, 2014, NMFS issued the final determination to list the Central and Southwest Atlantic Distinct DPS of scalloped hammerhead shark as threatened species pursuant to the Endangered Species Act (ESA) (79 FR 38214). The Central and Southwest Atlantic DPS of scalloped hammerhead sharks occur within the management area of Atlantic HMS commercial and recreational fisheries which are managed by NMFS's Office of Sustainable Fisheries, HMS Management Division. On August 27, 2014, NMFS published a final rule to list 7 coral species as threatened: five in the Caribbean including Florida and the Gulf of Mexico (*Dendrogyra cylindrus*, *Orbicella annularis*, *Orbicella faveolata*, *Orbicella franksi*, and *Mycetophyllia ferox*). Two Caribbean species currently listed as threatened (*Acropora cervicornis* and *Acropora palmata*) still warranted listing as threatened.

On October 30, 2014, NMFS requested reinitiation of ESA section 7 consultation on the continued operation and use of HMS gear types (including bottom longline) and associated fisheries management actions in the 2006 Consolidated Atlantic HMS FMP and its amendments, which were previously consulted on in the 2001 Atlantic HMS biological opinion and the 2012 Shark and Smoothhound biological opinion, to assess potential adverse effects of these gear types on the Central and Southwest DPS of scalloped hammerhead sharks and seven threatened coral species. NMFS has preliminarily determined that the ongoing operation of the fisheries is consistent with existing biological opinions and is not likely to jeopardize the continued

existence or result in an irreversible or irretrievable commitment of resources which would foreclose formulation or implementation of any reasonable and prudent alternative measures on the threatened coral species.

Table 4.34 provides information on observed interactions with protected resources for BLL vessels targeting sharks in the Gulf of Mexico and Atlantic regions. In 2013, two smalltooth sawfish were observed on sets targeting sharks. No sea turtle, sea bird, or marine mammal interactions were observed. No interactions with protected resources (sea bird, sea turtle, sawfish, or marine mammal) were observed for BLL vessels fishing in the Gulf of Mexico and South Atlantic regions targeting LCS (Gulak et al., 2014).

Table 4.34 Protected Species Interactions Observed Bottom Longline Trips Targeting Sharks in the Gulf of Mexico and Atlantic Ocean (2007-2013)

Year	Sea Turtles	Sea Birds	Marine Mammals	Smalltooth Sawfish	Total
2007	4 (2A, 2D)	-	-	3 (2A, 1D)	7
2008	1 (A)	-	-	2 (A)	3
2009	2 (D)	-	-	5 (A)	7
2010	4 (2A, 2D)	-	-	10 (A)	14
2011	4 (1A, 3D)	-	-	2 (A)	6
2012	2 (A)	-	-	1 (D)	3
2013	-	-	-	2 (A)	2
Total	17	0	0	25	42

Letters in parentheses indicate whether the animal was released alive (A), dead (D), or unknown (U).

4.6 Gillnet Fishery

Gillnet gear is the primary gear for vessels directing on small coastal sharks, although vessels directing on other species can also catch shark species. Vessels participating in the shark gillnet fishery typically possess permits for other Council and/or state managed fisheries and will deploy nets in several configurations based on target species including drift, strike, and sink gillnets. The data presented in this chapter focus on the gillnet fisheries that occur in the southeast and Gulf of Mexico regions and target small coastal sharks or finfish.

In addition to these southeast gillnet fisheries, in the northeast and mid-Atlantic regions, gillnet gear is the predominant gear type used in the smoothhound shark fishery. Smoothhound sharks are subject to federal management as a highly migratory species, but federal management measures have not yet been implemented. On August 7, 2014, NMFS published a proposed rule for Amendment 9 to the 2006 Consolidated HMS FMP (Amendment 9) that considers implementation of management measures for the smoothhound shark fishery and the shark gillnet fishery (79 FR 46217). A final rule is expected sometime in 2015. At this time, the data presented in this chapter do not focus on the smoothhound gillnet fisheries in the northeast or mid-Atlantic regions.

4.6.1 Current Management

Many of the commercial regulations for the Atlantic shark fishery are the same for both the bottom longline and gillnet fishery, including, but not limited to: seasons, quotas, species

complexes, permit requirements, authorized/prohibited species, and retention limits. Examples of regulations that are specific to shark gillnet fishing include requiring that gillnets remain attached to the vessel and requiring vessel operators to conduct net checks every two hours when gear is deployed.

In addition to considering federal management measures for smoothhound sharks, Draft Amendment 9 also considers modifying two shark gillnet requirements. First, Amendment 9 proposes to establish gear-tending requirements in order to implement the Terms and Conditions of the 2012 Shark and Smoothhound biological opinion. The proposed measures would limit soak times to 24 hours for fishermen using sink gillnet gear and require a 2-hour net check for fishermen using drift gillnet gear. Second, Draft Amendment 9 proposes to require federal directed Atlantic shark limited access permit holders with gil lnet gear on board to use a vessel monitoring system (VMS) only in the vicinity of the Southeast U.S. Monitoring Area, consistent with the Atlantic Large Whale Take Reduction Plan, instead of anywhere the fishermen uses gillnets (as currently required).

4.6.2 Recent Catch, Landings, and Discards of the Southeast Gillnet Fisheries

In 2013, a total of 225 sets comprised of various southeast gillnet fisheries were observed by the Southeast Gillnet Observer Program. A total of 4 strike gillnet fishery vessels were observed making 12 strike sets on 10 trips in 2013. During the strike gillnet trips, 42 Atlantic sharpnose sharks, 25 blacktip sharks, 20 blacknose sharks, 3 bonnethead sharks and 1 great hammerhead shark were observed on trips that targeted king mackerel in 2013. A total of 50 trips making 213 sink net sets on 20 vessels were observed in 2013. Table 4.35 through Table 4.37 of this section outline shark species composition, disposition, and summary information for sharks caught during observed sink gillnet trips with observers onboard in 2013 (Mathers et al., 2013).

Table 4.35 Shark Species Caught on Observed Southeast Sink Gillnet Trips Targeting Spanish Mackerel (2013)

Species	Total Caught (#)	Kept (%)	Discarded Alive (%)	Discarded Dead (%)
Atlantic sharpnose shark	123	31.4	57.1	11.4
Spinner shark	49	0.0	76.5	23.5
Bonnethead shark	41	9.1	45.5	45.5
Finetooth shark	34	0.0	81.8	18.2
Blacktip shark	20	35.7	42.9	21.4
Scalloped hammerhead shark	12	22.2	55.6	22.2
Blacknose shark	4	66.7	33.3	0.0
Total	283			

Source: Mathers et al., 2013.

Table 4.36 Shark Species Caught on Observed Southeast Sink Gillnet Trips Targeting Mixed Sharks (2013)

Species	Total Caught (#)	Kept (%)	Discarded Alive (%)	Discarded Dead (%)
Atlantic sharpnose shark	162	100.0	0.0	0.0
Spinner shark	155	36.8	63.2	0.0
Smooth dogfish	114	60.0	40.0	0.0
Scalloped hammerhead shark	80	28.6	42.9	28.6
Blacktip shark	27	40.7	59.3	0.0
Finetooth shark	21	66.7	33.3	0.0
Bonnethead shark	9	100.0	0.0	0.0
Blacknose shark	8	100.0	0.0	0.0
Total	576			

Source: Mathers et al., 2013.

Table 4.37 Shark Species Caught on Observed Southeast Sink Gillnet Trips Targeting Mixed Teleost (2013)

Species	Total Caught (#)	Kept (%)	Discarded Alive (%)	Discarded Dead (%)
Smooth dogfish	15	75.0	25.0	0.0
Atlantic sharpnose shark	5	0.0	100.0	0.0
Total	20			

Source: Mathers et al., 2013.

4.6.3 Gillnet Bycatch

This section describes the non-shark bycatch observed in the southeast sink gillnet fishery during trips targeting mixed sharks (Mathers et al., 2013).

There was a wider range of fish species caught in the sink gillnet fisheries due to the number of sets observed, gear deployment methods, and targeted species. Predominant species caught in sink gillnets included Atlantic croaker, Spanish mackerel, King mackerel, and little tunny. All of the observed interactions with protected species between 2000 and 2013 in the observed gillnet fisheries are on Table 4.38.

Sea Turtles and Sea BirdsThere were no sea turtles or sea birds observed caught in sink gillnet gear in 2013 (Mathers et al., 2013).

Marine Mammals

The MMPA Category II classification refers to occasional serious injuries and mortalities. In 2013, there were no marine mammals observed caught in gillnet gear in the shark fisheries (Mathers et al. 2013).

Smalltooth Sawfish and Atlantic Sturgeon

In 2013, there were no observed interactions with smalltooth sawfish or Atlantic sturgeon in gillnet gear. For sawfish, the last observed interaction occurred in 2003 and the sawfish was

released with no visible injuries. There have been no interactions observed to date for Atlantic sturgeon. Given the high rate of observer coverage in these gillnet fisheries consistent with Atlantic Large Whale Take Reduction Plan, NMFS believes that smalltooth sawfish and Atlantic sturgeon interactions in this fishery are rare.

Table 4.38 Protected Species Interactions in the Shark Gillnet Fishery Targeting Mixed Sharks Other than Smoothhounds (2007-2013)

Year	Sea Turtles	Sea Birds	Marine Mammals	Smalltooth Sawfish	Atlantic Sturgeon	Total
2007	4 (3A, 1D)	-	-	-	-	4
2008	-	-	-	-	-	0
2009	2 (A)	1 (A)	1 (D)	-	-	4
2010	-	1 (D)	-	-	-	1
2011	1 (A)	-	-	-	-	1
2012	2 (A)	-	-	-	-	2
2013	-	-	-	-	-	0
Total	9	2	1	0	0	12

Letters in parentheses indicate whether the animal was released alive (A), dead (D), or unknown (U).

4.7 Buoy Gear

Buoy gear means a fishing gear consisting of one or more floatation devices supporting a single mainline to which no more than two hooks or gangions are attached. The buoy gear fishery is usually prosecuted at night. Authorized permit holders may not possess or deploy more than 35 floatation devices and may not deploy more than 35 individual buoy gears per vessel. Buoy gear must be constructed and deployed so that the hooks and/or gangions are attached to the vertical portion of the mainline. Floatation devices may be attached to one, but not both ends of the mainline, and no hooks or gangions may be attached to any floatation device or horizontal portion of the mainline. If more than one floatation device is attached to a buoy gear, no hook or gangion may be attached to the mainline between them. Individual buoy gears may not be linked, clipped, or connected together in any way. Buoy gears must be released and retrieved by hand. All deployed buoy gear must have some type of monitoring equipment affixed to it including, but not limited to, radar reflectors, beeper devices, lights, or reflective tape. If only reflective tape is affixed, the vessel deploying the buoy gear must possess on board an operable spotlight capable of illuminating deployed floatation devices. If a gear monitoring device is positively buoyant, and rigged to be attached to a fishing gear, it is included in the 35 floatation device vessel limit and must be marked appropriately.

4.7.1 Recent Catch, Landings, and Discards

Buoy gear effort and catch data are available for 2008 through 2013 (Table 4.39, Table 4.40, and Table 4.41). Buoy gear effort and catch data prior to 2008 may be found in earlier SAFE Reports. Prior to 2007, buoy gear catch data were included in handline catch data.

Table 4.39 Buoy Gear Effort (2008-2013)

Specifications	2008	2009	2010	2011	2012	2013
Number of vessels	44	53	57	50	55	46
Number of trips	598	708	632	603	688	629
Average buoy gears deployed per trip	11.2	11.9	11.9	12.2	14.1	17.95
Total number of set hooks	8,922	11,595	8,855	8,858	11,639	12,557
Average number hooks per gear	1.3	1.4	1.2	1.2	1.2	1.1

Source: Fisheries Logbook System.

Table 4.40 Buoy Gear Landings (lb dw, 2008-2013)

Species	2008	2009	2010	2011	2012	2013
Swordfish	122,700	154,674	153,520	138,041	178,088	140,038
Dolphin	1,031	1,427	419	1,269	1,324	486
Oilfish	414	245	270	338	719	693
Shortfin mako shark	797	932	466	812	2,295	1,194
Wahoo	227	623	75	198	163	70
Bigeye tuna	0	0	0	350	0	0
Blacktip shark	0	0	0	0	38	0
King mackerel	194	67	576	142	56	134
Yellowfin tuna	0	350	0	400	0	0
Hammerhead shark	0	350	1,190	575	400	0
Silky shark	0	20	48	0	120	0
Greater amberjack	0	10	201	0	0	0
Bonito	0	86	120	0	54	0
Blackfin tuna	0	0	115	70	97	32

Source: Fisheries Logbook System.

Table 4.41 Buoy Gear Catches and Discards, in Numbers of Fish per Species (2008-2013)

Species	2008	2009	2010	2011	2012	2013
Kept						
Swordfish	1,843	2,085	1,950	1,893	2,699	2,155
Dolphinfish	103	113	29	121	196	51
Oilfish	10	5	10	76	13	18
Bigeye tuna	0	0	0	4	0	0
Blackfin tuna	7	2	7	3	10	3
Wahoo	6	44	2	40	12	2
Bonito	7	11	6	0	1	0
King mackerel	53	4	7	130	2	14
Shortfin mako	4	8	4	7	14	13
Hammerhead shark	0	1	6	3	3	0
Blacktip shark	0	0	0	0	1	0
Silky shark	1	1	1	0	4	0
Yellowfin tuna	0	9	0	8	0	0
Greater amberjack	0	1	7	0	0	0
Thresher shark	0	0	0	0	1	0
Released Alive						
Swordfish	1,018	763	1,031	1,659	1,221	478
Dolphinfish	0	0	0	11	14	4
Blue marlin	0	1	1	2	2	1
White marlin	3	0	0	0	0	0
Sailfish	1	0	1	1	0	0
Hammerhead shark	7	35	52	81	93	68
Blue shark	2	1	0	30	5	0
Thresher shark	1	1	2	7	6	1
Dusky shark	0	0	12	2	9	97
Night shark	1	34	39	87	238	129
Oceanic whitetip shark	1	0	0	0	0	1
Bigeye thresher shark	0	0	0	2	2	1
Tiger shark	2	1	1	2	2	3
Sandbar shark	0	1	2	0	0	0
Longfin mako shark	3	2	7	5	6	4
Shortfin mako shark	1	2	6	4	5	6
Blacktip shark	0	8	4	19	39	11
Silky shark	0	13	12	14	12	33
Oilfish	0	1	0	1	0	0
Greater amberjack	0	1	0	0	0	0
Blackfin Tuna	0	0	0	3	0	0
Skipjack Tuna	0	0	0	1	0	0
Discarded Dead						
Swordfish	80	51	87	155	139	75
Silky shark	0	0	0	0	0	0
Hammerhead shark	0	0	1	1	0	0
Blackfin tuna	0	1	0	1	0	0
Blue marlin	0	1	0	0	0	0
Night shark	0	0	1	0	1	2
Longfin mako shark	0	0	0	0	1	0
Shortfin Mako	0	0	0	1	0	0

Source: Fisheries Logbook System.

4.8 Green-Stick Gear

Green-stick gear is defined at 50 CFR § 635.2 as "an actively trolled mainline attached to a vessel and elevated or suspended above the surface of the water with no more than 10 hooks or gangions attached to the mainline. The suspended line, attached gangions and/or hooks, and catch may be retrieved collectively by hand or mechanical means. Green-stick does not constitute a pelagic longline or a bottom longline as defined in this section or as described at §635.21(c) or §635.21(d), respectively." Green-stick gear may be used to harvest bigeye, northern albacore, yellowfin, and skipjack tunas (collectively referred to as BAYS tunas) and bluefin tuna aboard Atlantic tunas General category, HMS Charter/Headboat, and Atlantic tunas Longline permitted vessels.

Onboard Atlantic tunas Longline permitted vessels, up to 20 J-hooks may be possessed for use with green-stick gear and no more than 10 J-hooks may be used with a single green-stick gear. J-hooks may not be used with PLL gear and no J-hooks may be possessed onboard a PLL vessel unless green-stick gear is also onboard. J-hooks possessed and used onboard PLL vessels may be no smaller than 1.5 inch (38.1 mm) when measured in a straight line over the longest distance from the eye to any other part of the hook.

4.8.1 Recent Catch and Landings

Recent Atlantic tuna catches are presented earlier in Chapter 4 (See Table 4.1). An unknown portion of these landings were made with green-stick gear as the gear has been used in the Atlantic tuna fisheries since the mid-1990s. Reporting mechanisms that are in place do not enable the number of vessels using green-stick gear to be quantified; although, limited data allow the catch to be characterized and were presented in the 2008 SAFE Report (NMFS, 2008). Data on landings specific to green-stick gear are expected to improve because a green-stick gear code was designated for use in dealer reporting systems such as trip tickets in the southeast and electronic reporting programs in the northeast. NMFS has, with some success, also encouraged states to utilize the green-stick gear code in their trip ticket programs. In 2009, the states of South Carolina, Louisiana, and Texas indicated that they would add a green-stick gear code to their trip ticket programs and Florida confirmed that the code has been added to their program. Beginning in 2013, the HMS e-Dealer electronic reporting system was required to be used by Atlantic HMS dealers and Table 4.42 shows greenstick landings data from this system.

Table 4.42 Select Landings with Greenstick Gear (2013)

Species	Region	Pounds (whole weight)
Yellowfin tuna	Atlantic	43,175
	Gulf of Mexico	19,212

Additional landings of other species occurred in 2013, but cannot be displayed due to confidentiality requirements.
Source: Atlantic HMS Electronic Dealer Reporting System

NMFS and the Louisiana Department of Wildlife and Fisheries continue to investigate the catch and bycatch of green-stick gear with a study in the northern Gulf of Mexico that is funded by the NOAA Bycatch Reduction Engineering Program. Sampling began in summer 2012 and is scheduled to continue through 2015 with a final report expected in late 2015.

4.9 Safety Issues

The following section highlights safety issues in fisheries. The USCG maintains websites for each of its regions (http://www.uscg.mil/top/units/), many of which provide regulatory and safety information, and region-specific statistics. Specific statistical data on vessel safety may also be obtained from the following U.S. Coast Guard (USCG) websites/documents: (1) "Analysis of Fishing Vessel Casualties – A Review of Lost Fishing Vessels and Crew Fatalities 1992-2010": http://www.fishsafe.info/FVStudy_92_10.pdf; and, (2) USCG Safety Program website: http://www.uscgboating.org/default.aspx. A summary of previous findings can be found in the 2011 HMS SAFE Report.

Effective July 1, 2013, all newly constructed commercial fishing vessels must meet the following standards, as required by the Coast Guard Authorization Act of 2010 and the subsequent Coast Guard and Marine Transportation Act of 2012.

- **Vessels less than 50 feet** must be constructed in a manner that provides a level of safety equivalent to the minimum standards for recreational vessels;
- **Vessels that are 50 feet or longer** must meet a class society's construction standards, be issued class documents and remain in class if the vessel operates beyond 3 nm from the territorial sea baseline, or has more than 16 individuals on board;
- **Vessels that are 79 feet or longer** must be assigned a load line if operated outside the Boundary line.

Beginning October 15, 2015, the USCG requires that all commercial fishing vessels that operate or transit more than 3 nautical miles off shore must be fully compliant with existing fishing vessel safety regulations (46 CFR Subchapter E, "Load Lines" Parts 41 - 47). To meet this requirement, all commercial fishing vessels will be required to complete biennial dockside safety examinations. More information on the new requirement can be found at the USCG Commercial Fishing Safety website: http://www.uscg.mil/d13/cfvs/.

4.10 Fishery Data: Landings by Species

The following tables (

Table 4.43 - Table 4.48) of Atlantic HMS landings are taken from the 2014 National Report of the United States to ICCAT (NMFS, 2014). The purpose of this section is to provide a summary of recent domestic landings of HMS by gear and species allowing for interannual comparisons. Landings for sharks (Table 4.49 - Table 4.53) were updated based on 2013 landings from eDealer.

Table 4.43 U.S. Landings (mt) of Atlantic Bluefin Tuna, by Area and Gear (2006-2013)

Area	Gear	2006	2007	2008	2009	2010	2011	2012	2013
NW Atlantic	Longline**	104.4	70.7	107.4	166.7	164.7	216.3	189.4	153.0
	Handline	0.3	0.0	0.6	0.1	2.7	0.9	1.3	0.5
	Purse seine	3.6	27.9	0.0	11.4	0.0	0.0	1.7	42.5
	Harpoon	30.3	22.5	30.2	65.6	29.0	70.1	52.3	45.0
	Rod and reel (>145 cm LJFL)*	217.2	235.4	305.7	717.1	570.8	-	-	-
	Rod and reel (<145 cm LJFL)*	158.2	398.6	352.2	143.3	111.4	-	-	-
	Unclassified	0.0	0.0	0.3	0.0	0.0	0.0	0.0	-
	Commercial rod and reel	-	-	-	-	-	419.5	419.5	249.5
	Recreational rod and reel	-	-	-	-	-	148.6	148.7	131.4
	Trawl	-	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Gulf of Mexico	Longline	88.1	81.2	111.7	111.6	56.2	13.2	101.2	33.5
	Rod and reel*	0.6	0.0	0.0	0.0	0.0	-	-	-
NC Area 94a	Longline	12.1	12.4	13.5	56.7	17.8	11.3	3.9	3.5
Caribbean	Longline	-	0.0	0.0	0.0	0.0	0.6	0.9	0.4
All areas	All gears	614.8	848.7	919.9	1,272.6	952.6	904.7	919.0	658.9

* Rod and reel catches and landings represent estimates of landings and dead discards when available based on statistical surveys of the U.S. recreational harvesting sector. ** Includes landings and estimated discards from scientific observer and logbook sampling programs. Source: NMFS, 2014.

Table 4.44 U.S. Landings (mt) of Atlantic Yellowfin Tuna, by Area and Gear (2006-2013)

Area	Gear	2006	2007	2008	2009	2010	2011	2012	2013
NW Atlantic	Longline	701.7	757.8	460.5	416.4	673.4	684.1	873.7	540.6
	Rod and reel*	4,649.2	2,726.0	657.1	742.6	1,209.0	1,133.8	1,433	495.4
	Troll	0.0	6.9	2.4	5.4	1.2	0.5	0.3	23.5
	Gillnet	4.7	4.2	0.6	0.0	0.5	0.06	1.5	0.9
	Trawl	0.7	2.4	0.0	0.0	1.4	1.3	0.2	0.0
	Handline	105.1	113.2	30.1	58.7	43.5	34	66.0	67.4
	Trap	0.0	0.0	0.05	0.1	0.5	0.0	0.0	0
	Unclassified	3.9	7.0	1.4	2.2	9.5	4.2	4.5	2.1
Gulf of Mexico	Longline	1,128.5	1,379.5	756.5	1,147.0	303.2	642.1	1,251.0	833.1
	Rod and reel*	258.4	227.6	366.3	264.7	18.0	362.8	294.1	191.8
	Handline	49.9	26.2	11.2	21.6	2.9	8.7	175	6.8
	Gillnet	0.0	0.0	0.0	0.0	0.0	-	-	-
	Unclassified	0.0	0.0	0.0	0.0	0.0	0.1	8.7	0.0
Caribbean	Longline	179.7	255.6	107.1	136.7	212.2	132.1	141.9	169.8
	Handline	7.8	9.1	3.7	3.3	1.9	1.5	3.2	0.0
	Gillnet	0.0	0.0	0.04	0.04	0.0	0.0	0.0	0.0
	Trap	0.4	0.0	0.0	0.0	0.0	-	-	-
	Rod and reel*	0.0	12.4	9.7	3.5	4.5	0.9	0.0	0.0
NC Area 94a	Longline	0.0	1.8	0.4	0.0	0.0	0.0	3	0.0
SW Atlantic	Longline	0.0	0.0	0.0	0.0	28.7	-	-	-
All areas	All gears	7,090.0	5,529.5	2,407.2	2,802.3	2,481.7	3,010.4	4,099.5	2,331.6

* Rod and reel catches and landings represent estimates of landings and dead discards based on statistical surveys of the U.S. recreational harvesting sector. ** ≤ 0.05 mt. Source: NMFS, 2014.

Table 4.45 U.S. Landings (mt) of Atlantic Skipjack Tuna, by Area and Gear (2006-2013)

Area	Gear	2006	2007	2008	2009	2010	2011	2012	2013
NW Atlantic	Longline	0.04	0.0	0.1	0.4	1.4	0.4	0.3	0.4
	Rod and reel*	34.6	27.4	21.0	75.7	29.1	50.3	98.0	37.7
	Gillnet	0.2	0.05	0.04	3.3	0.2	0.04	1.6	0.27
	Trawl	0.7	0.005	0.003	0.0	0.0	0.0	0.006	0.0
	Handline	0.2	0.3	0.4	2.8	1.2	1.5	2.0	1.2
	Trap	0.3	0.0	0.0	0.0	0.0	-	-	-
	Pound net	0.5	0.0	0.0	0.0	0.0	-	-	-
	Unclassified	0.06	0.6	0.5	1.2	0.1	0.8	0.6	0.7
Gulf of Mexico	Longline	0.0	0.0	0.05	0.05	0.0	0.2	0.0	0.0
	Rod and reel*	6.4	23.9	16.3	22.0	15.5	23.7	0.06	77.1
	Handline	0.0	0.2	0.06	0.2	0.02	0.2	2.5	0.02
Caribbean	Longline	0.2	0.02	1.3	0.05	0.0	0.0	0.1	0.0
	Gillnet	0.02	0.0	0.01	0.6	0.0	0.0	-	0.0
	Rod and reel*	7.7	0.2	11.3	4.3	0.4	3.0	3.0	0.0
	Handline	10.0	13.7	16.0	8.8	6.2	4.5	4.0	0.0
	Trap	0.05	0.0	0.0	0.0	0.0	-	1	-
All areas	All gears	61.0	66.5	67.1	119.4	54.2	86.7	111.5	117.4

* Rod and reel catches and landings represent estimates of landings and dead discards based on statistical surveys of the U.S. recreational harvesting sector. Source: NMFS, 2014.

Table 4.46 U.S. Landings (mt) of Atlantic Bigeye Tuna, by Area and Gear (2006-2013)

Area	Gear	2006	2007	2008	2009	2010	2011	2012	2013
NW Atlantic	Longline	469.4	331.9	380.2	384.7	431.1	397.2	567	490.4
	Gillnet	0.2	1.0	0.04	0.0	0.0	0.0	0.2	0.06
	Trap	-	-	-	0.3	1.2	0.0	0.0	0.0
	Rod and reel*	422.3	126.8	70.9	77.6	116.8	72.4	269.6	337.5
	Troll	0.0	0.9	0.8	0.6	0.0	0.9	0.2	5.0
	Handline	21.5	16.8	6.9	4.6	1.8	3.4	7.8	16.1
	Trawl	0.0	0.4	0.0	0.0	0.7	1.2	0.2	0.0
	Unclassified	0.8	0.9	2.1	1.9	6.7	4.7	7.1	6.1
Gulf of Mexico	Longline	37.7	37.0	14.0	19.5	6.9	2.2	13.1	9.2
	Rod and reel*	24.3	0.0	0.0	0.0	0.8	34.9	0.1	7.0
	Handline	1.5	0.01	0.0	0.07	0.09	0.0	0.0	0.0
	Unclassified	-	-	-	0.0	0.0	0.0	0.4	0.0
Caribbean	Longline	10.5	3.4	8.9	22.2	5.0	0.0	0.002	8.6
	Rod and reel*	-	0.0	0.0	0.0	0.0	2.3	0.0	0.0
	Handline	0.0	0.0	0.0	0.0	0.0	0.05	0.0	0.0
NC Area 94a	Longline	3.0	8.4	4.6	3.7	3.7	-	-	-
SW Atlantic	Longline	0.0	0.0	0.0	0.0	0.2	200.8	3.1	0.2
All areas	All gears	991.4	527.3	488.5	515.2	571.3	718.7	868.8	880.4

* Rod and reel catches and landings represent estimates of landings and dead discards based on statistical surveys of the U.S. recreational harvesting sector. Source: NMFS, 2014.

Table 4.47 U.S. Landings (mt) of Atlantic Albacore Tuna, by Area and Gear (2006-2013)

Area	Gear	2006	2007	2008	2009	2010	2011	2012	2013
NW Atlantic	Longline	84.8	109.9	115.9	141.3	87.8	138.2	157.7	0.0
	Gillnet	2.1	1.0	2.1	5.6	0.5	0.2	5.7	0.0
	Handline	2.6	5.4	0.2	0.5	1.9	1.7	0.6	0.0
	Trawl	1.1	0.3	0.01	0.08	0.2	2.0	0.3	0.0
	Trap	0.5	0.4	0.005	0.01	0.01	0.0	0.0	0.0
	Troll	0.0	0.2	0.2	0.07	0.04	0.0	0.0	0.2
	Rod and reel*	284.2	393.6	125.2	22.8	46.2	170.6	144.3	340.3
	Unclassified	5.6	4.2	1.9	1.3	2.2	7.8	4.4	0.6
Gulf of Mexico	Longline	7.6	15.4	10.2	16.7	7.1	101.8	103.5	255.8
	Rod and reel*	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0
	Handline	0.07	0.0	0.0	0.01	0.01	0.1	0.5	2.3
Caribbean	Longline	10.5	1.2	0.4	0.3	0.7	**	**	**
	Gillnet	0.0	0.0	0.0	0.0	0.0	-	-	-
	Rod and reel*	0.0	0.0	0.0	0.0	103.6	**	**	**
	Trap	0.0	0.0	0.0	0.0	0.0	-	-	-
	Handline	0.4	0.2	0.4	0.003	0.05	**	**	**
NC Area 94a	Longline	0.03	0.3	0.8	0.3	0.6	-	-	-
SW Atlantic	Longline	0.0	0.0	0.0	0.0	0.0	-	-	-
All areas	All gears	399.5	532.1	256.7	188.8	314.5	422.4	417.7	599.3

* Rod and reel catches and landings represent estimates of landings and dead discards based on statistical surveys of the U.S. recreational harvesting sector. ** Caribbean landings included in Gulf of Mexico total. Source: NMFS, 2014.

Table 4.48 U.S. Catches and Landings (mt) of Atlantic Swordfish, by Area and Gear (2005-2012)

Area	Gear	2009	2010	2011	2012	2013
NW Atlantic	Longline*	1,696.0	1,647.7	1,741.8	1,987.0	1,730.5
	Gillnet	0.05	0.0	0.0	0.0	0.0
	Handline	123.0	126.9	120.4	151.3	104.6
	Trawl	23.7	21.2	17.9	26.8	2.9
	Harpoon	0.05	0.6	0.6	0.3	0.5
	Rod and reel**	19.0	47.6	48.7	64.3	21.7
	Trap	0.0	1.8	-	-	-
	Unclassified	0.0	2.1	0.0	0.5	1.5
	Unclassified discards	3.0	3.6	5.8	3.6	0.0
Gulf of Mexico	Longline*	476.1	212.3	363.6	673.3	530.5
	Handline	1.9	2.6	0.5	3.3	0.5
	Rod and reel**	12.6	1.7	4.9	6.3	0.3
	Unclassified	2.9	-	-	-	-
	Unclassified discards	3.5	1.3	2.5	6.8	0.0
Caribbean	Longline	22.6	41.4	14.2	3.7	22.6
	Trap*	-	-	-	-	-
	Rod and reel**	0.0	-	-	0.2	0.0
	Handline	0.003	0.0	0.0	0.0	0.0
	Unclassified discards	0.2	0.04	0.9	0.0	0.0
NC Atlantic	Longline*	496.4	304.8	451.3	682.6	539.5
SW Atlantic	Longline*	0.0	0.3	0.0	0.0	0.06
All areas	All gears	2,878.0	2,412.1	2,773.7	3,609.6	2,955.0

* Includes landings and estimated dead discards from scientific observer and logbook sampling programs. ** Rod and reel catches and landings represent estimates of landings and dead discards based on statistical surveys of the U.S. recreational harvesting sector. Source: NMFS, 2014.

Table 4.49 Commercial Landings of Large Coastal Sharks in the Atlantic Region (lb dw, 2008-2013)

Large Coastal Sharks	2008	2009	2010	2011	2012	2013
Aggregated Large Costal Sharks						
Blacktip	258,035	229,267	246,617	176,136	215,403	256,277
Bull	43,200	61,396	56,901	49,927	24,504	33,980
Lemon	22,530	30,909	25,316	45,448	21,563	16,791
Nurse	10	0	71	0	81	0
Sandbar	63,035	54,141	84,339	94,295	46,446	46,868
Silky	306	1,386	1,049	992	29	186
Spinner	1,265	20,022	13,544	4,113	10,643	26,892
Tiger	14,119	15,172	43,145	36,425	23,245	16,561
Total Aggregated LCS carcass weight	339,465 (154 mt dw)	358,152 (162 mt dw)	386,643 (175 mt dw)	313,041 (142 mt dw)	295,468 (134 mt dw)	350,687 (159 mt dw)
Hammerhead Sharks						
Hammerhead, great	0	0	0	0	371	7,406
Hammerhead, scalloped	0	0	0	0	15,800	27,229
Hammerhead, smooth	0	4,025	7,802	110	3,967	1,521
Hammerhead, unclassified	21,631	62,825	43,345	35,618	9,617	0
Total Hammerhead carcass weight	21,631 (10 mt dw)	66,850 (30 mt dw)	51,147 (23 mt dw)	35,728 (16 mt dw)	29,755 (13 mt dw)	36,156 (16 mt dw)
Shark Research Fishery						
Sandbar	63,035 (29 mt dw)	54,141 (25 mt dw)	84,339 (38 mt dw)	94,295 (43 mt dw)	46,446 (21 mt dw)	46,868 (21 mt dw)
Unclassified Sharks						
Unclassified, assigned to large coastal	187,670 (85 mt dw)	70,894 (32 mt dw)	2,229 (1 mt dw)	50,711 (23 mt dw)	53,705 (24 mt dw)	0 (0 mt dw)
Total LCS carcass weight	611,918 (278 mt dw)	550,037 (249 mt dw)	524,376 (238 mt dw)	493,809 (224 mt dw)	425,612 (193 mt dw)	433,710 (197 mt dw)

Sources: 2008-2012 Cortés pers. comm.; 2013 eDealer reports.

Table 4.50 Commercial Landings of Large Coastal Sharks in the Gulf of Mexico Region (lb dw, 2008-2013)

Large Coastal Sharks	2008	2009	2010	2011	2012	2013
Blacktip sharks						
Blacktip	326,280 (148 mt dw)	374,573 (170 mt dw)	654,942 (297 mt dw)	384,662 (174 mt dw)	405,015 (184 mt dw)	531,440 (241 mt dw)
Aggregated Large Costal Sharks						
Bull	144,356	150,094	165,894	178,595	255,892	279,379
Lemon	30,897	54,984	21,081	38,132	29,362	12,869
Nurse	48	147	0	27	11	0
Silky	4,488	4,087	270	643	0	1,714
Spinner	122,395	17,028	78,951	66,996	49,647	68,576
Tiger	17,089	7,874	8,825	21,594	26,209	14,062
Total Aggregated LCS carcass weight	319,273 (145 mt dw)	234,214 (106 mt dw)	275,021 (125 mt dw)	305,987 (139 mt dw)	361,121 (164 mt dw)	376,600 (171 mt dw)
Hammerhead Sharks						
Hammerhead, great	156	1,430	6,339	49	99	28,591
Hammerhead, scalloped	0	0	0	0	33,216	1,101
Hammerhead, smooth	0	0	0	0	0	0
Hammerhead, unclassified	35,332	95,678	51,149	68,709	8,005	0
Total Hammerhead carcass weight	35,488 (16 mt dw)	97,108 (44 mt dw)	57,488 (26 mt dw)	68,758 (31 mt dw)	41,320 (19 mt dw)	29,692 (13 mt dw)
Shark Research Fishery						
Sandbar	26,740 (12 mt dw)	113,717 (52 mt dw)	54,914 (25 mt dw)	46,040 (21 mt dw)	23,854 (19 mt dw)	37,582 (13 mt dw)
Unclassified Shark						
Unclassified, assigned to large coastal	131,724	163,320	0	169,651	188,566	0
Total LCS carcass weight	839,505 (381 mt dw)	982,932 (446 mt dw)	1,042,365 (473 mt dw)	975,098 (442 mt dw)	1,019,876 (463 mt dw)	975,315 (442 mt dw)

Sources: 2008-2012 Cortés pers. comm.; 2013 eDealer reports.

Table 4.51 Commercial Landings of Small Coastal Sharks in the Atlantic Region (lb dw, 2008-2013)

Small Coastal Sharks	2008	2009	2010	2011	2012	2013
Blacknose Sharks						
Blacknose	117,197 (53 mt dw)	90,023 (41 mt dw)	30,287 (14 mt dw)	28,373 (13 mt dw)	37,873 (17 mt dw)	33,382 (15 mt dw)
Non-Blacknose Small Coastal Sharks						
Bonnethead	61,549	53,912	9,069	28,284	19,907	22,845
Finetooth	26,872	63,359	76,438	52,318	15,922	19,452
Sharpnose, Atlantic	261,788	262,508	211,190	214,382	345,625	183,524
Total Non-Blacknose SCS carcass weight	350,209 (159 mt dw)	379,779 (172 mt dw)	296,697 (135 mt dw)	294,984 (134 mt dw)	381,454 (173 mt dw)	225,821 (102 mt dw)
Unclassified Shark						
Unclassified, assigned to small coastal	23,077 (10 mt dw)	34,429 (16 mt dw)	851 (1 mt dw)	36,639 (17 mt dw)	492 (1 mt dw)	0 (0 mt dw)
Total SCS carcass weight	490,483 (222 mt dw)	504,231 (229 mt dw)	327,835 (149 mt dw)	359,996 (163 mt dw)	419,819 (190 mt dw)	259,203 (118 mt dw)

Sources: 2008-2012 Cortés pers. comm.; 2013 eDealer reports.

Table 4.52 Commercial Landings of Small Coastal Sharks in the Gulf of Mexico Region (lb dw, 2008-2013)

Small Coastal Sharks	2008	2009	2010	2011	2012	2013
Blacknose Sharks						
Blacknose	17,058 (8 mt dw)	61,682 (28 mt dw)	4,204 (2 mt dw)	3,900 (2 mt dw)	14,379 (7 mt dw)	2,009 (1 mt dw)
Non-Blacknose Small Coastal Sharks						
Bonnethead	388	3,444	2,672	12,986	2,601	4,436
Finetooth	53,961	95,705	45,001	159,558	130,278	60,118
Sharpnose, Atlantic	77,861	43,217	17,958	53,723	100,253	116,133
Total Non-Blacknose SCS carcass weight	132,210 (60 mt dw)	142,366 (65 mt dw)	65,631 (30 mt dw)	226,267 (103 mt dw)	233,132 (106 mt dw)	180,687 (82 mt dw)
Unclassified Shark						
Unclassified, assigned to small coastal	0 (0 mt dw)	0 (0 mt dw)	0 (0 mt dw)	0 (0 mt dw)	0 (0 mt dw)	0 (0 mt dw)
Total SCS carcass weight	149,268 (68 mt dw)	204,048 (93 mt dw)	69,835 (32 mt dw)	230,167 (104 mt dw)	247,511 (112 mt dw)	182,695 (83 mt dw)

Sources: 2008-2012 Cortés pers. comm.; 2013 eDealer reports.

Table 4.53 Commercial Landings of Atlantic Pelagic Sharks (lb dw, 2008-2013)

Pelagic Sharks	2008	2009	2010	2011	2012	2013
Blue Sharks						
Blue	3,229 (1.5 mt dw)	4,793 (2.2 mt dw)	9,135 (4.1 mt dw)	13,370 (6.1 mt dw)	17,200 (7.8 mt dw)	9,767 (4.4 mt dw)
Porbeagle Sharks						
Porbeagle	5,259 (2.4 mt dw)	3,609 (1.6 mt dw)	4,097 (1.9 mt dw)	5,933 (2.7 mt dw)	4,250 (1.9 mt dw)	54 (1 mt dw)
Pelagic Sharks Other Than Blue or Porbeagle						
Mako, shortfin	120,255	141,456	220,400	207,630	198,841	199,177
Mako, unclassified	39,661	9,383	0	0	0	0
Oceanic whitetip	1,899	933	796	2,435	258	62
Thresher	47,528	33,333	61,290	47,462	63,965	48,768
Total Other Pelagic carcass weight	209,343 (95 mt dw)	185,105 (84 mt dw)	282,486 (128 mt dw)	257,527 (117 mt dw)	263,064 (119 mt dw)	248,007 (112 mt dw)
Unclassified Shark						
Unclassified, assigned to pelagic	14,819 (7 mt dw)	6,650 (3 mt dw)	16,160 (7 mt dw)	33,884 (15 mt dw)	28,932 (13 mt dw)	0 (0 mt dw)
Total Pelagic carcass weight	234,650 106 mt dw)	200,157 (91 mt dw)	311,878 (141 mt dw)	310,714 (141 mt dw)	313,446 (142 mt dw)	257,828 (117 mt dw)

Sources: 2008-2012 Cortés pers. comm.; 2013 eDealer reports

Table 4.54 Commercial Landings of Shark Fins (lb dw, 2008-2013)

Fins	2008	2009	2010	2011	2012	2013
Atlantic Large Costal Shark and Small Coastal Shark Fins						
Blacktip	0	0	0	0	0	2,047
Bull	0	0	0	0	0	23
Hammerhead, great	0	0	0	0	0	82
Hammerhead, scalloped	0	0	0	0	0	7
Lemon	0	0	0	0	0	1,457
Spinner	0	0	0	0	0	3
Tiger	0	0	0	0	0	134
Unclassified LCS	26,707	33,173	20,545	21,535	15,370	0
Blacknose	0	0	0	0	0	3
Bonnethead	0	0	0	0	0	315
Finetooth	0	0	0	0	0	91
Sharpnose, Atlantic	0	0	0	0	0	202
Unclassified SCS	0	0	0	0	0	0
Total Atlantic Fin weight	26,707 (12 mt dw)	33,173 (15 mt dw)	20,545 (9 mt dw)	21,535 (10 mt dw)	15,370 (7 mt dw)	4,364 (2 mt dw)
Gulf of Mexico Large Costal Shark and Small Coastal Shark Fins						
Blacktip	0	0	0	0	0	20,939
Bull	0	0	0	0	0	12,019
Hammerhead, great	0	0	0	0	0	220
Hammerhead, scalloped	0	0	0	0	0	3
Lemon	0	0	0	0	0	61
Silky	0	0	0	0	0	58
Spinner	0	0	0	0	0	2,463
Tiger	0	0	0	0	0	76
Unclassified LCS	23,938	35,152	45,425	40,768	40,693	0
Bonnethead	0	0	0	0	0	14
Finetooth	0	0	0	0	0	2,866
Sharpnose, Atlantic	0	0	0	0	0	277
Unclassified SCS	0	0	0	0	0	0
Total Gulf of Mexico Fin weight	23,938 (11 mt dw)	35,152 (16 mt dw)	45,425 (21 mt dw)	40,768 (18 mt dw)	40,693 (18 mt dw)	38,996 (18 mt dw)
Pelagic Shark Fins						
Mako, shortfin	0	0	0	0	0	1,095
Porbeagle	0	0	0	0	0	210*
Thresher	0	0	0	0	0	1,638
Unclassified Pelagic	0	0	0	0	0	0
Total Pelagic Fin weight	0 (0 mt dw)	0 (0 mt dw)	0 (0 mt dw)	0 (0 mt dw)	0 (0 mt dw)	3,151 (1 mt dw)
Unclassified Shark Fins						
Unclassified	0 (0 mt dw)	0 (0 mt dw)	0 (0 mt dw)	0 (0 mt dw)	0 (0 mt dw)	22,712 (10 mt dw)
Total Fin weight	50,645 (23 mt dw)	68,325 (31 mt dw)	65,970 (30 mt dw)	62,303 (28 mt dw)	56,063 (25 mt dw)	69,223 (31 mt dw)

* NMFS is examining the amount of porbeagle shark fins based on the small amount of carcass weight. Sources: 2008-2012 Cortés pers. comm.; 2013 eDealer reports

Table 4.55 Commercial Landings of Prohibited Shark Species (lb dw, 2008-2013)

Prohibited Sharks	2008	2009	2010	2011	2012	2013
Previously Large Costal Shark and Small Coastal Sharks Landed in Atlantic						
Basking[2]	0	0	0	0	0	0
Bignose[1]	0	0	0	0	0	0
Bigeye sand tiger[2]	0	0	0	0	0	0
Caribbean reef[1]	0	0	0	0	0	0
Dusky[1]	0	0	0	14	172	0
Galapagos[1]	0	0	0	0	0	0
Narrowtooth[1]	0	0	0	0	0	0
Night[1]	0	0	0	0	0	0
Sand tiger[2]	0	0	18	20	66	0
Whale[2]	0	0	0	0	0	0
White[2]	117	0	0	0	0	0
Atlantic angel[1]	91	0	96	11	171	0
Sharpnose, Caribbean[1]	0	0	0	0	0	38
Total Atlantic carcass weight	208 (1 mt dw)	0 (0 mt dw)	114 (1 mt dw)	45 (1 mt dw)	409 (1 mt dw)	38 (1 mt dw)
Previously Large Costal Shark and Small Coastal Sharks Landed in Gulf of Mexico						
Basking[2]	0	0	0	0	0	0
Bignose[1]	0	0	0	0	109	0
Bigeye sand tiger[2]	0	0	0	0	0	0
Caribbean reef[1]	0	0	0	0	0	0
Dusky[1]	0	0	0	0	0	0
Galapagos[1]	0	0	0	0	0	0
Narrowtooth[1]	0	0	0	0	0	0
Night[1]	0	0	0	208	0	0
Sand tiger[2]	0	0	0	0	0	0
Whale[2]	0	0	0	0	0	0
White[2]	0	0	0	27	0	0
Atlantic angel[1]	0	0	0	0	0	0
Sharpnose, Caribbean[1]	0	0	0	0	0	0
Total Gulf of Mexico carcass weight	0 (0 mt dw)	0 (0 mt dw)	0 (0 mt dw)	235 (1 mt dw)	109 (1 mt dw)	0 (0 mt dw)
Previously Pelagic Sharks						
Bigeye thresher[1]	0	0	28	135	276	0
Bigeye sixgill[1]	0	0	0	0	0	0
Mako, longfin[1]	1,896	25,264	289	3,465	362	112
Sevengill[1]	0	0	0	0	0	0
Sixgill[1]	0	0	0	0	0	0
Total Pelagic carcass weight	1,896 (1 mt dw)	25,264 (11 mt dw)	317 (1 mt dw)	3,600 (2 mt dw)	638 (1 mt dw)	112 (1 mt dw)
Total Prohibited carcass weight	2,104 (1 mt dw)	25,264 (11 mt dw)	431 (1 mt dw)	3,880 (2 mt dw)	1,156 (1 mt dw)	150 (1 mt dw)

[1] Prohibited in the commercial fishery as of June 21, 2000. [2] Prohibited as of April 1997. Sources: 2008-2012 Cortés pers. comm.; 2013 eDealer reports

Chapter 4 References

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5. ECONOMIC STATUS OF HMS FISHERIES

Development of each rule, and of Atlantic HMS fisheries as a whole, is facilitated when there is an economic baseline against which the rule or fishery may be evaluated. In this analysis, NMFS used the past ten years of data to facilitate the analysis of trends. It also should be noted that all dollar figures are reported in nominal dollars (i.e., current dollars). If analysis of real dollar (i.e., constant dollar) trends controlled for inflation is desired, price indexes for 2006 to 2013 are provided in Table 5.1. To determine the real price in base year dollars, divide the base year price index by the current year price index, and then multiply the result by the price that is being adjusted for inflation.

Table 5.1 Inflation Price Indexes

Year	CPI-U	GDP Deflator	PPI Unprocessed Finfish
2006	201.6	94.8	334.6
2007	207.3	97.3	318.1
2008	215.3	99.2	301.6
2009	214.5	100.0	306.9
2010	218.1	101.2	381.5
2011	224.9	103.3	388.1
2012	229.6	105.2	367.4
2013	233.0	106.7	438.2

Note: The CPI-U is the standard Consumer Price Index for all urban consumers (1982-1984=100) produced by U.S. Department of Labor Bureau of Labor Statistics. The source of the Producer Price Index (PPI) for unprocessed finfish (1982=100) is also the Bureau of Labor Statistics. The Gross Domestic Product (GDP) Implicit Price Deflator (2009=100) is produced by the U.S. Department of Commerce Bureau of Economic Analysis.

5.1 Commercial Fisheries

All of the information and data presented in this section were obtained from NMFS 2014. In 2013, 9.9 billion pounds valued at $5.5 billion were landed for all fish species by U.S. fisherman at U.S. ports. In 2012, 9.6 billion pounds valued at $5.1 billion were landed for all fish species by U.S. fisherman at U.S. ports. The overall value of landings between 2012 and 2013 increased by 7.6 percent. The total value of commercial HMS landings in 2013 was $45.2 million (Table 5.3).

The estimated value of the 2013 domestic production of all fishery products was $10.8 billion. This is essentially unchanged from the estimated value in 2012. The total import value of fishery products was $33.2 billion in 2013. This is an increase of $2.1 billion from 2012. The total export value of fishery products was $29.1 billion in 2013. This is an increase of $1.7 billion from 2012.

5.1.1 Ex-Vessel Prices

The average ex-vessel prices per pound dressed weight (dw) for 2006 to 2013 by species and area are summarized in Table 5.2. Prices are reported in nominal dollars. The ex-vessel

price depends on a number of factors including the quality of the fish (e.g., freshness, fat content, method of storage), the weight of the fish, the supply of fish, and consumer demand.

Average ex-vessel prices for bluefin tuna have declined 23 percent since 2012. The ex-vessel prices for bluefin tuna can be influenced by many factors, including market supply and the Japanese Yen/U.S. Dollar (¥/$) exchange rate. Figure 5.1 shows the average ¥/$ exchange rate, plotted with average ex-vessel bluefin tuna prices, from 1971 to 2013.

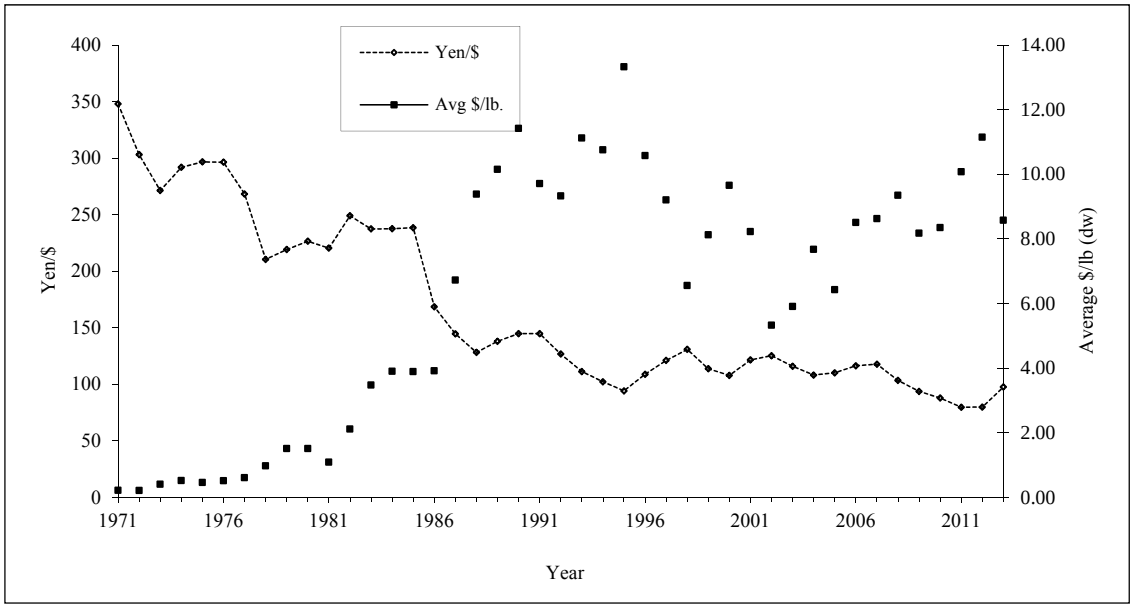

Figure 5.1 Average Annual Yen/$ Exchange Rate and Average U.S. Bluefin Tuna Ex-vessel $/lb (dw) for All Gears (1971-2013)

Source: Federal Reserve Bank (research.stlouisfed.org) and NMFS Northeast HMS Branch.

Table 5.2 Average Ex-vessel Prices per Pound for Atlantic HMS, by Area (2006-2013)

Species	Area	2006	2007	2008	2009	2010	2011	2012	2013
Bigeye tuna	Gulf of Mexico	$5.73	$5.66	$6.12	$5.80	$5.79	$5.64	$6.19	$3.36
	S. Atlantic	3.94	4.34	4.34	4.11	4.03	4.73	4.75	5.15
	Mid-Atlantic	4.96	5.48	5.70	5.42	5.86	6.38	6.90	6.30
	N. Atlantic	4.54	5.31	5.60	5.18	4.79	5.39	5.67	5.50
Bluefin tuna	Gulf of Mexico	4.78	5.63	4.51	4.65	5.42	6.38	7.16	6.72
	S. Atlantic	10.42	11.16	13.29	14.43	8.75	7.34	8.20	7.52
	Mid-Atlantic	7.92	6.95	7.94	10.10	8.94	10.64	10.95	9.02
	N. Atlantic	7.68	8.31	8.31	7.06	8.38	10.21	11.57	8.60
Yellowfin tuna	Gulf of Mexico	2.89	3.02	3.51	3.04	3.72	3.65	3.51	3.66
	S. Atlantic	2.32	2.69	2.99	2.90	3.53	3.93	4.63	3.64
	Mid-Atlantic	2.39	2.99	3.30	2.50	3.43	3.45	4.46	4.73
	N. Atlantic	2.63	3.17	3.82	2.86	2.80	3.39	4.22	3.98
Albacore tuna	Gulf of Mexico	0.62	0.53	0.49	0.55	1.40	1.09	0.68	0.82
	S. Atlantic	0.93	1.24	1.21	1.29	1.36	1.42	1.64	2.07
	Mid-Atlantic	0.82	0.86	0.97	1.10	1.30	1.19	1.25	1.42
	N. Atlantic	0.98	1.37	2.00	1.26	1.56	1.55	1.34	1.92
Skipjack tuna	Gulf of Mexico	-	-	-	0.50	-	0.90	0.75	-
	S. Atlantic	0.74	0.73	0.95	0.95	1.13	1.25	1.10	0.80
	Mid-Atlantic	0.79	2.22	4.50	-	-	0.60	1.06	0.87
	N. Atlantic	-	-	-	-	-	-	-	0.93
Swordfish	Gulf of Mexico	2.90	3.07	2.93	2.69	3.53	4.15	3.42	3.53
	S. Atlantic	3.86	4.24	4.11	4.12	4.63	4.84	4.97	5.00
	Mid-Atlantic	3.52	4.07	3.50	3.40	4.43	4.44	4.51	4.49
	N. Atlantic	3.65	4.11	4.20	3.49	4.61	4.22	4.49	4.63
Large coastal sharks	Gulf of Mexico	0.75	0.42	0.67	0.52	0.48	0.38	0.40	0.46
	S. Atlantic	0.47	0.54	0.72	0.55	0.65	0.61	0.75	0.77
	Mid-Atlantic	0.28	0.56	0.71	0.57	0.64	0.54	0.67	0.65
	N. Atlantic	-	-	-	-	-	-	-	-
Pelagic sharks	Gulf of Mexico	1.21	1.29	1.18	1.25	1.47	1.54	1.33	1.53
	S. Atlantic	1.23	1.29	1.29	1.25	1.27	1.46	1.74	1.66
	Mid-Atlantic	1.15	1.06	1.20	1.16	1.19	1.30	1.39	1.72
	N. Atlantic	0.73	0.85	0.96	1.23	1.28	1.48	1.68	1.97
Small coastal sharks	Gulf of Mexico	0.51	0.58	0.62	0.69	0.55	0.58	0.66	0.33
	S. Atlantic	0.68	0.80	0.78	0.71	0.79	0.81	0.99	0.72
	Mid-Atlantic	0.45	0.43	0.48	0.57	0.57	0.59	0.68	0.83
	N. Atlantic	-	-	-	-	-	-	-	-
Shark fins	Gulf of Mexico	16.40	13.22	14.94	15.09	16.48	15.11	14.97	11.06
	S. Atlantic	13.24	11.44	12.73	13.15	15.35	14.91	11.00	6.02
	Mid-Atlantic	9.82	6.12	3.74	3.62	6.83	3.50	2.79	1.45
	N. Atlantic	6.23	3.24	3.00	3.67	2.40	1.60	1.86	1.85

Sources: HMS eDealer, Dealer weighout slips from the Southeast Fisheries Science Center (SEFSC), Northeast Fisheries Science Center (NEFSC), and bluefin tuna dealer reports from the Northeast Regional Office. Gulf of Mexico includes: TX, LA, MS, AL, and the west coast of FL. S. Atlantic includes: east coast of FL. GA, SC, and NC dealers reporting to SEFSC. Mid-Atlantic includes: NC dealers reporting to NEFSC, VA, MD, DE, NJ, NY, and CT. N. Atlantic includes: RI, MA, NH, and ME. For bluefin tuna, all NC landings are included in Mid-Atlantic.

5.1.2 Revenues

Table 5.3 summarizes the average annual revenues of the Atlantic HMS fisheries based on average ex-vessel prices. Data for Atlantic HMS landings weight is as reported per eDealer in 2013, the U.S. National Report (NMFS, 2013a), the information used in the shark stock assessments, information given to ICCAT (Cortés pers. comm., 2013), as well as price and weight reported to the NMFS Northeast Regional Office by Atlantic bluefin tuna dealers. These values indicate that the estimated total annual revenue of Atlantic HMS fisheries has decreased in 2013 to $45.2 million from $64.0 million in 2012. From 2012 to 2013, the Atlantic tuna fishery's total revenue decreased by $18.8 million. A majority of that increase can be attributed to the decrease in commercial landings of yellowfin and bluefin tuna. From 2012 to 2013, the annual revenues for the shark fisheries decreased by $0.8 million. Finally, the annual revenues for swordfish declined by $4.0 million from 2012 to 2013 due to a decrease in landings.

Table 5.3 Estimates of the Total Ex-vessel Annual Revenues of Atlantic HMS Fisheries (2006-2013)

Species		2006	2007	2008	2009	2010	2011	2012	2013
Bigeye tuna	Ex-vessel $/lb dw	$4.80	$5.20	$5.26	$5.09	$5.22	$5.77	$6.42	$5.71
	Weight lb dw	960,863	706,361	736,520	774,087	799,934	1,122,619	1,039,585	872,238
	Fishery revenue	$4,612,142	$3,673,077	$3,874,095	$3,940,103	$4,175,655	$6,477,512	$6,674,136	$4,787,072
Bluefin tuna	Ex-vessel $/lb dw	$8.51	$8.63	$9.35	$8.18	$8.35	$10.08	$11.15	$8.58
	Weight lb dw	528,404	515,176	720,823	899,477	1,119,937	996,661	995,583	682,533
	Fishery revenue	$4,496,718	$4,445,969	$6,739,695	$7,357,722	$9,351,474	$10,046,343	$11,100,750	$5,826,566
Yellowfin tuna	Ex-vessel $/lb dw	$2.50	$2.90	$3.22	$2.87	$3.52	$3.60	$4.16	$3.94
	Weight lb dw	3,849,095	4,521,240	2,423,498	3,159,665	2,154,728	2,676,682	4,349,482	2,594,514
	Fishery revenue	$9,622,738	$13,111,596	$7,803,664	$9,068,239	$7,584,643	$9,636,055	$18,093,845	$11,300,700
Skipjack tuna	Ex-vessel $/lb dw	$0.75	$0.75	$1.01	$0.91	$1.13	$1.17	$1.06	$0.85
	Weight lb dw	21,693	26,455	32,628	30,688	16,269	12,931	17,804	3,857
	Fishery revenue	$16,303	$19,793	$32,950	$28,057	$18,451	$15,164	$18,949	$3,204
Albacore tuna	Ex-vessel $/lb dw	$0.86	$0.97	$1.15	$1.11	$1.36	$1.29	$1.31	$1.70
	Weight lb dw	203,354	244,272	216,759	291,187	290,827	491,133	489,800	420,537
	Fishery revenue	$175,198	$237,681	$248,400	$324,439	$394,754	$632,450	$639,370	$613,893
Total tuna	Fishery revenue	$18,923,099	$21,488,116	$18,698,804	$20,718,559	$21,524,977	$26,807,524	$36,527,050	$22,531,435
Swordfish	Ex-vessel $/lb dw	$3.54	$3.99	$3.68	$3.46	$4.40	$4.50	$4.41	$4.68
	Weight lb dw	3,002,597	3,643,926	3,414,513	3,762,280	3,676,324	4,473,140	5,561,605	4,366,578
	Fishery revenue	$10,639,324	$14,544,604	$12,577,768	$13,031,079	$16,186,878	$20,130,595	$24,534,334	$20,535,723
Large coastal sharks	Ex-vessel $/lb dw	$0.62	$0.48	$0.70	$0.54	$0.60	$0.53	$0.59	$0.64
	Weight lb dw	3,808,662	2,329,272	1,451,423	1,532,969	1,566,741	1,469,142	1,445,597	1,409,433
	Fishery revenue	$2,363,068	$1,122,051	$1,009,138	$828,003	$938,044	$779,993	$854,916	$695,722
Pelagic sharks	Ex-vessel $/lb dw	$1.17	$1.12	$1.21	$1.18	$1.23	$1.35	$1.43	$1.68
	Weight lb dw	192,843	262,179	234,546	225,575	312,195	314,314	314,084	257,774
	Fishery revenue	$224,911	$294,036	$284,113	$266,548	$382,527	$425,831	$449,759	$400,341
Small coastal sharks	Ex-vessel $/lb dw	$0.61	$0.70	$0.69	$0.69	$0.69	$0.75	$0.87	$0.55
	Weight lb dw	763,327	618,191	639,842	708,279	397,766	590,174	667,501	445,641
	Fishery revenue	$465,586	$432,816	$440,108	$488,374	$272,590	$441,269	$578,126	$280,629
Shark fins (5% of all sharks landed)	Ex-vessel $/lb dw	$14.80	$11.63	$12.43	$12.45	$14.02	$11.90	$8.96	$6.07
	Weight lb dw	238,242	160,482	116,291	123,341	113,835	118,682	121,359	153,356*
	Fishery revenue	$3,525,871	$1,865,900	$1,444,918	$1,535,469	$1,596,472	$1,412,129	$1,086,979	$744,984
Total sharks	Fishery revenue	$6,579,436	$3,714,802	$3,178,277	$3,118,394	$3,189,633	$3,059,222	$2,969,779	$2,121,676
Total HMS	Fishery revenue	$36,141,860	$39,747,522	$34,454,849	$36,868,033	$40,901,488	$49,997,341	$64,031,163	$45,188,834

* Shark fin total weight was based on reported shark fin landings reported to eDealer in 2013. Sources: HMS eDealer Program, NMFS Northeast Commercial Fisheries Database Service; Pelagic Dealer Compliance Program; and NMFS, 2013.

5.1.3 Operating Costs

NMFS has collected operating cost information from commercial permit holders via logbook reporting. Each year, 20 percent of active Atlantic HMS commercial permit holders are selected to report economic information along with their Atlantic HMS logbook or Coastal Fisheries logbook submissions. In addition, NMFS also receives voluntary submissions of the trip expense and payment section of the logbook form from non-selected vessels.

The primary expenses associated with operating an Atlantic HMS permitted PLL commercial vessel include labor, fuel, bait, ice, groceries, other gear, and light sticks on swordfish trips. Unit costs are collected on some of the primary variable inputs associated with trips. The unit costs for fuel, bait, and light sticks are reported in Table 5.4. Fuel costs increased over 59 percent from 2006 to 2013 while the cost per pound for bait remained fairly constant from 2006 to 2010 but nearly doubled between 2010 and 2011 and has remained at this new level through 2013. The unit cost per light sticks has remained fairly constant over the past few years.

Table 5.4 Pelagic Longline Vessel Median Unit Costs for Fuel, Bait, and Light Sticks (2006–2013)

Input Unit Costs ($)	2006	2007	2008	2009	2010	2011	2012	2013
Fuel (per gallon)	2.15	2.25	3.55	1.73	2.50	3.38	3.50	3.35
Bait (per lb)	0.85	0.85	0.81	0.81	0.85	1.55	1.58	1.55
Light sticks (per stick)	0.46	0.36	0.37	0.37	0.28	0.25	0.30	0.30

Source: Fisheries Logbook System.

Table 5.5 provides the median total cost per trip for the major variable inputs associated with Atlantic HMS trips taken by pelagic longline vessel. Fuel costs are one of the largest variable expenses. Fuel costs decreased significantly in 2013. Pelagic longline vessel fuel costs per trip decreased 18 percent from 2012 to 2013.

Table 5.5 Median Input Costs for Pelagic Longline Vessel Trips (2006–2013)

Input Costs ($)	2006	2007	2008	2009	2010	2011	2012	2013
Fuel	1,728	3,012	3,600	3,000	2,480	3,445	2,963	2,436
Bait	1,115	1,200	1,500	1,875	1,731	3,671	3,600	3,284
Light sticks	728	648	600	600	493	663	750	784
Ice costs	498	540	540	625	225	726	759	440
Grocery expenses	696	786	800	1,000	752	900	900	900
Other trip costs	1,200	1,500	1,651	1,670	1,500	2,000	1,443	587

Source: Fisheries Logbook System.

Labor costs are also an important component of operating costs for HMS pelagic longline vessels. Table 5.6 lists the number of crew on a typical pelagic longline trip. The median number of crew members has been consistently three from 2006 to 2013. Most crew and captains are paid based on a lay system. According to Atlantic HMS logbook reports, owners are typically paid 50 percent of revenues. Captains receive a 25 percent share and crew in 2013 received 25 percent on average. These shares are typically paid out after costs are netted from

gross revenues. Median total shared costs per trip on pelagic longline vessels have ranged from $5,657 to $6,948 from 2006 to 2013.

Table 5.6 Median Labor Inputs for Pelagic Longline Vessel Trips (2006–2013)

Labor	2006	2007	2008	2009	2010	2011	2012	2013
Number of crew	3	3	3	4	3	3	3	3
Owner share (%)	50	47	45	45	50	50	50	50
Captain share (%)	20	20	20	20	23	20	25	25
Crew share (%)	13	15	15	30	29	29	30	25
Total shared costs ($)	5,657	5,566	6,037	7,000	6,500	11,306	9,000	6,948

Source: Fisheries Logbook System.

In 2013, median reported total trip sales were $14,320. In 2012, median reported total trip sales were $20,572. After adjusting for operating costs, median net earnings per trip were $11,517 in 2012. Median net earnings per trip decreased to $6,187 in 2013.

It should be noted that operating costs for the Atlantic HMS commercial fleet vary considerably from vessel to vessel. The factors that impact operating costs include unit input costs, vessel size, target species, and geographic location among other things.

5.2 Fish Processing and Wholesale Sectors

Consumers spent an estimated $86.5 billion for fishery products in 2013, including $57.9 billion at food service establishments, $28.1 billion in retail sales for home consumption, and $478 million for industrial fish products. The commercial marine fishing industry contributed $43.6 billion (in value added) to the U.S. Gross National Product in 2013 (NMFS, 2014).

5.2.1 Dealers

NMFS does not currently have information regarding the costs and revenues for Atlantic HMS dealers. In general, dealer costs include: purchasing fish; paying employees to process the fish; rent or mortgage; and supplies to process the fish. Some dealers may provide loans to the vessel owner, money for vessel repairs, fuel, ice, bait, etc. In general, outlays and revenues of dealers are not as variable or unpredictable as those of a vessel owner; however, dealer costs may fluctuate depending upon supply of fish, labor costs, and equipment repair.

Although NMFS does not have specifics regarding HMS dealers, there is some information on the number of employees for processors and wholesalers in the United States provided in *Fisheries of the United States* (NMFS, 2014) (http://www.st.nmfs.noaa.gov/st1/publications.html). Table 5.7 provides a summary of available information.

Table 5.7 Processors and Wholesalers: Plants and Employment (2012)

Area and State	Processing[1]		Wholesale[2]		Total	
	Plants	Employment	Plants	Employment	Plants	Employment
New England						
Maine	35	714	172	1,191	207	1,905
New Hampshire	10	242	11	113	21	355
Massachusetts	52	2,336	168	2,065	220	4,401
Rhode Island	11	*	39	-	50	*
Connecticut	5	*	17	193	22	193
Total	113	3,292	407	3,562	520	6,854
Mid-Atlantic						
New York	22	397	257	1,892	279	2,289
New Jersey	13	521	86	909	99	1,430
Pennsylvania	4	*	31	649	35	649
Delaware	1	*	6	26	7	26
District of Columbia	-	-	2	*	2	*
Maryland	17	480	51	568	68	1,048
Virginia	36	1,441	59	493	95	1,934
Total	93	2,839	492	4,537	585	7,376
South Atlantic						
North Carolina	28	671	59	430	87	1,101
South Carolina	2	*	24	161	26	161
Georgia	6	*	31	540	37	540
Florida	40	1,442	302	2,235	342	3,677
Total	76	2,113	416	3,366	492	5,479
Gulf						
Alabama	32	1,432	16	283	48	1,715
Mississippi	22	2,120	21	116	43	2,236
Louisiana	62	1,898	101	617	163	2,515
Texas	34	1,553	112	1,020	146	2,573
Total	150	7,003	250	2,036	400	9,039
Inland States or Other						
Areas**, Total	54	2,554	221	2,723	275	5,277

[1] Based on North American Industry Classification System (NAICS) 3117 as reported to the Bureau of Labor Statistics. [2] Based on North American Industry Classification System (NAICS) 42446 as reported to the Bureau of Labor Statistics. *Included with Inland States. **Includes Puerto Rico and U.S. Virgin Islands. Source: NMFS, 2014b.

5.2.2 Processing Sector

NMFS does not currently collect wholesale price information from dealers.

NMFS has information regarding the mark-up percentage paid by consumers. A mark-up or margin is the difference between the price paid for the product by the consumer and the wholesale or dockside value for an equivalent weight of the product. This information is presented in Table 5.8. Primary wholesalers and processors on average received a 77 percent margin on sales in 2013, which is lower than margins in 2012.

Table 5.8 Summary of the Mark-Up and Consumer Expenditures for the Primary Wholesale and Processing of Domestic Commercial Marine Fishery Products

	2011	2012	2013
Purchase of fishery inputs ($)	9,142,981,000	8,687,636,000	9,690,909,000
Percent mark-up of fishery inputs (%)	90.3	90	77
Total mark-up ($)	8,942,039,000	7,803,257,000	7,510,336,000
Value added as percent of total mark-up (%)	60.4	60	60
Value added within sector ($)	5,398,531,000	4,714,590,000	4,534,951,000
Total value of sales within sector ($)	18,085,020,000	16,490,893,000	17,201,245,000

Source: NMFS, 2014b.

5.3 International Trade

Several Regional Fishery Management Organizations (RFMOs), including ICCAT, have taken steps to improve the collection of international trade data in order to estimate landings related to these fisheries, and to identify potential compliance problems with certain RFMO management measures. This section describes the United States' participation in HMS related international trade programs, a review of U.S. HMS export activity, import activity, and data use.

The United States collects general trade monitoring data through the U.S. Bureau of Customs and Border Protection (CBP; imports) and the U.S. Bureau of the Census (Census Bureau; exports and imports). These programs collect data on the amount and value of imports and exports categorized under the Harmonized Tariff Schedule (HTS). Many HMS have distinct HTS codes, and some species are further subdivided by product (e.g., fresh or frozen, fillets, steaks, etc.). NMFS provides Census Bureau trade data for marine fish products online for the public at http://www.st.nmfs.gov/st1/trade/index.html. Some species are combined into groups (e.g., sharks), which can limit the value of these data for fisheries management when species-specific information is required. Often the utility of these data are further limited if the ocean area of origin for each product is not distinguished. For example, the HTS code for Atlantic, Pacific, and Indian Ocean bigeye tuna is the same.

NMFS implemented the HMS International Trade Permit (ITP) in 2005 (69 FR 67268, November 17, 2004) to identify importers and exporters of HMS products that require trade monitoring documentation (i.e., bluefin tuna, swordfish, and frozen bigeye tuna). Traders of shark fins must also be permitted. Currently there are 253 permit holders distributed among 23 U.S. states and territories (Table 5.9). Copies of the ITP application and all trade monitoring documents associated with these programs are found on the NMFS HMS Management Division webpage at http://www.nmfs.noaa.gov/sfa/hms/. These and several other trade monitoring programs established by NMFS for HMS are described in greater detail in the 2011 HMS SAFE Report.

Table 5.9 Number of International Trade Permits (ITPs) by State (as of November 2014)

State	Number of ITPs	State	Number of ITPs
AS	0	NH	2
CA	69	NJ	10
FL	62	NV	1
GA	2	NY	26
HI	16	OH	1
IL	2	OR	1
LA	2	PA	1
MA	28	RI	5
MD	1	SC	1
ME	7	TX	4
MP	1	VA	1
NC	3	WA	7
Total			253

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

CITES is an international agreement that regulates the global trade in endangered plants and wildlife. The goal of CITES is to protect and regulate species of animals and plants to ensure that commercial demand does not threaten their survival in the wild. Countries cooperate through a system of permits and certificates that confirm the trade of specific species is legal. Species listed on Appendix I are considered to be at risk of extinction, and are prohibited from international commercial trade, except in special circumstances. Species listed on Appendix II are those that are vulnerable to overexploitation, but not at risk of extinction. In every case of an import or export of an Appendix II species, an export/import permit may only be issued if, the export/import will not be detrimental to the survival of the species, the specimen was legally acquired (in accordance with the national wildlife protection laws) and any live specimen will be shipped in a manner which will not cause it any damage. During the sixteenth meeting of the Conference of Parties to CITES (CoP16), the United States and Brazil cosponsored a successful Columbian proposal to list oceanic whitetip shark under Appendix II. The United States cosponsored this listing because of concerns that over-exploitation to supply the international fin trade negatively affects the population status of this species. Three species of hammerhead shark (scalloped, smooth, and great) were also added to Appendix II during CoP16, where they joined previously listed whale, basking, and great white sharks, along with oceanic whitetip shark. These Appendix II listings were effective September 14, 2014.

On June 27, 2012, the CITES Secretariat sent a Notification to the Parties regarding the inclusion of two shark species, scalloped hammerhead (*Sphyrna lewini*) and porbeagle (*Lamna nasus*), in CITES Appendix III. Their inclusion in Appendix III requires member parties to issue CITES permits or certificates for the import, export, and re-export of these species (or any of their parts or products). It also means that any U.S. import, export, or re-export of these species requires a declaration to and clearance from the U.S. Fish and Wildlife Service. In accordance with provisions of Article XVI, paragraph 2 of the CITES Convention, the inclusion of these species in Appendix III took effect 90 days after the Notification (i.e., effective as of September 25, 2012).

5.3.1 U.S. Exports of HMS

"Exports" may include merchandise of both domestic and foreign origin. The Census Bureau defines exports of "domestic" merchandise to include commodities that are grown, produced, or manufactured in the United States (e.g., fish caught by U.S. fishermen). For statistical purposes, domestic exports also include commodities of foreign origin which have been altered in the United States from the form in which they were imported, or which have been enhanced in value by further manufacture in the United States. The value of an export is the FAS (free alongside ship) value defined as the value at the port of export based on a transaction price including inland freight, insurance, and other charges incurred in placing the merchandise alongside the carrier. It excludes the cost of loading the merchandise, freight, insurance, and other charges or transportation costs beyond the port of export.

Atlantic and Pacific Bluefin Tuna Exports

Table 5.10 gives bluefin tuna export data for exports from the United States since 2002 and includes data from the NMFS BCD program and Census Bureau data. The Census Bureau usually reports a greater amount of bluefin tuna exported when compared to the amount reported by NMFS. Additional quality control measures are taken by NMFS to ensure data for other species (e.g., Southern bluefin tuna) or other transaction types (e.g., re-exports) are not erroneously included with bluefin tuna export data. Bluefin tuna re-export data are listed separately later in this section (Table 5.18).

Table 5.10 United States Exports of Atlantic and Pacific Bluefin Tuna (2003-2013)

Year	Atlantic BFT Commercial Landings[1] (mt dw)	Atlantic BFT Exports[2] (mt dw)	Pacific BFT Exports[2] (mt dw)	Total U.S. Exports[2] (mt dw)	Total U.S. Exports[3] (mt)	Value of U.S. Exports[3] ($ million)
2003	756.9	578.7	2.1	580.8	998	11.36
2004	428.6	247.3	0.0	247.3	370	4.50
2005	419.4	245.7	125.1	370.8	454	5.30
2006	204.6	93.1	0.0	93.1	281	3.60
2007	196.4	85.4	8.2	93.6	238	2.90
2008	266.4	146.5	0.0	146.5	177	2.49
2009	408.5	236.2	0.0	236.2	300	4.05
2010	509.5	334.2	0.0	334.2	346	4.90
2011	453.6	329.5	0.8	330.5	293	4.03
2012	452.2	334.5	0.0	334.5	511	4.91
2013	310.4	139.0	0.0	139.0	296	2.92

Note: most exports of Pacific bluefin tuna (BFT) were in round (whole) form, although some exports were of dressed and gilled/gutted fish; Atlantic exports were almost entirely dressed, but also included whole and other product forms (dw); data are preliminary and subject to change. Sources: [1] Northeast Regional Office, [2] NMFS Bluefin Tuna Catch Document Program, and [3] U.S. Census Bureau.

In the time series shown in Table 5.10 and depicted in Figure 5.2, U.S. exports of Atlantic bluefin tuna generally increased when commercial landings increased, while domestic consumption of U.S. landings remained fairly constant (i.e., between 100 and 200 mt) from year to year. Most U.S. bluefin tuna exports are destined for the sushi markets in Japan. As shown in Figure 5.2 and Figure 5.3, the percentage of the commercial U.S. bluefin tuna catch that was exported was lowest when landings declined to their lowest point in 2007, and then increased as landings and percent exports increased through 2010, and percent exports continued to climb through 2012. Landings were low again in 2013, but domestic consumption increased and percent of exports decreased sharply, to the second lowest for the time series. This may have been a reflection of the improved U.S. economy, as imports also increased (Figure 5.4).

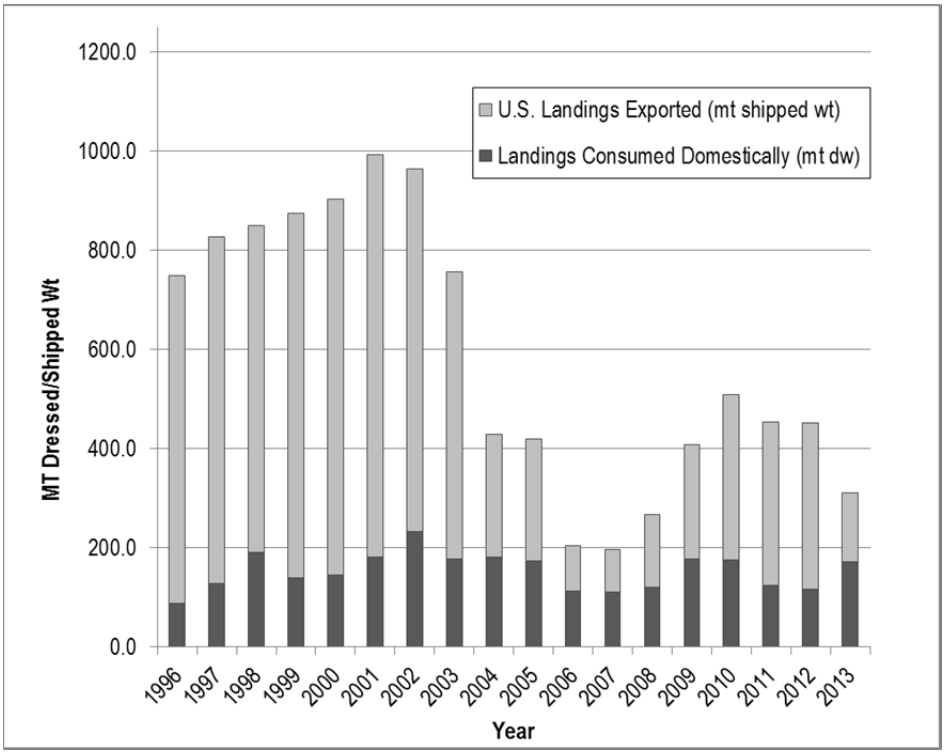

Figure 5.2 Annual U.S. Domestic Landings of Atlantic Bluefin Tuna, Divided into U.S. Export (mt shipped weight) and U.S. Domestic Consumption (mt dw) (1996-2013)

Figure 5.3 Annual Percentage (by weight) of Commercially-Landed U.S. Atlantic Bluefin Tuna that was Exported (1996-2013)

Other Tuna Exports

Export data for other tunas is gathered by the Census Bureau, and includes trade data for albacore, yellowfin, bigeye, and skipjack tuna from all ocean areas of origin combined. The value of annual albacore exports has exceeded the value for any other tuna export for the same year since the beginning of the time series. The total value of albacore exports has remained over $20 million per year for the last eight years (Table 5.11). Most albacore exports are Pacific in origin, as Atlantic landings have ranged between 189 mt and 640 mt during the time series in Table 5.11, but total U.S. exports has ranged from , ,mt in 2013 to a low of 7,951 mt in 2005.

Table 5.11 U.S. Atlantic Landings and Total U.S. Exports of Albacore Tuna (2003–2013)

		U.S. Exports (from all ocean areas)[2]					
		Fresh		Frozen		Total for all Exports	
Year	Atlantic Landings (mt ww)[1]	Amount (mt)	Value ($ million)	Amount (mt)	Value ($ million)	Amount (mt)	Value ($ million)
2003	448	894	1.86	9,731	18.85	10,624	20.71
2004	640	1,360	3.28	10,737	24.11	12,097	27.38
2005	486	549	1.61	7,402	16.99	7,951	18.60
2006	400	378	1.04	8,810	19.56	9,187	20.60
2007	532	275	0.84	11,731	25.52	12,006	26.35
2008	257	997	2.69	7,958	22.54	8,955	25.23
2009	189	417	1.02	9,903	22.58	9,510	23.60
2010	315	1,269	3.25	8,528	23.31	9,798	26.56
2011	422	531	1.47	9,807	23.73	10,338	25.20
2012	418	1,256	4.46	9,787	26.51	11,043	30.97
2013	599	1,481	4.88	13,770	34.73	15,251	39.62

Note: Landings may be calculated on a calendar or fishing year basis; exports may be in whole (ww) or product weight (dw); data are preliminary and subject to change. Sources: [1]NMFS, 2014, [2]U.S. Census Bureau.

Table 5.12 and Table 5.13 show U.S. Atlantic landings and U.S. exports from all ocean areas for yellowfin and skipjack tuna, respectively. Yellowfin exports were greater and more valuable than exports for skipjack or bigeye tuna (Table 5.14) and were unusually high in 2008. The amount of fresh yellowfin product exported usually exceeds the amount of frozen yellowfin product annually, but has been overtaken by frozen product during the last two years. Amounts of frozen yellowfin were the lowest of the time series in 2011, but increased dramatically over the last two years. Table 5.13 shows that the amount and value of exported fresh and frozen skipjack tuna has varied over the eleven year time series without any perceptible pattern. Fresh skipjack exports have fallen consistently over the last five years, to the second lowest value of the time series in 2013. In contrast, in 2013, exported amount (575 mt) and value ($3.43 million) of product peaked for the time series.

Table 5.12 U.S. Atlantic Landings and Total U.S. Exports of Yellowfin Tuna (2003-2013)

		U.S. Exports (from all ocean areas)[2]					
		Fresh		Frozen		Total for all Exports	
Year	Atlantic Landings (mt ww)[1]	Amount (mt)	Value ($ million)	Amount (mt)	Value ($ million)	Amount (mt)	Value ($ million)
2003	7,685	1,792	2.93	176	0.68	1,968	3.62
2004	6,437	306	1.54	242	0.31	549	1.86
2005	5,562	158	1.70	291	0.97	449	2.67
2006	7,090	183	1.96	108	0.37	291	2.32
2007	5,529	148	1.75	138	0.44	286	2.19
2008	2,407	198	2.09	4,140	9.06	4,338	11.16
2009	2,802	221	2.51	274	0.66	495	3.17
2010	2,482	211	2.31	70	0.33	281	2.64
2011	3,010	278	3.03	56	0.23	334	3.26
2012	4,100	311	3.35	535	1.91	846	5.26
2013	2,332	224	2.55	624	1.88	848	4.43

Note: Landings may be calculated on a calendar or fishing year basis; exports may be in whole (ww) or product weight (dw); data are preliminary and subject to change. Sources: [1]NMFS, 2014, [2]U.S. Census Bureau.

Table 5.13 U.S. Atlantic Landings and Total U.S. Exports of Skipjack Tuna (2003-2013)

Year	Atlantic Landings (mt ww)[1]	U.S. Exports (from all ocean areas)[2]					
		Fresh		Frozen		Total for all Exports	
		Amount (mt)	Value ($ million)	Amount (mt)	Value ($ million)	Amount (mt)	Value ($ million)
2003	77	81	0.22	0	0.00	81	0.22
2004	102	55	0.30	140	0.18	196	0.48
2005	30	35	0.14	-	-	35	0.14
2006	61	6	0.02	23	0.04	30	0.06
2007	67	17	0.06	77	0.12	94	0.18
2008	67	31	0.15	350	0.41	381	0.56
2009	119	206	0.54	530	0.71	737	1.25
2010	54	194	0.57	126	0.17	319	0.73
2011	87	162	0.47	14	0.05	176	0.52
2012	112	46	0.17	293	1.17	334	1.34
2013	117	10	0.04	575	3.43	585	3.43

Note: Landings may be calculated on a calendar or fishing year basis; exports may be in whole (ww) or product weight (dw); data are preliminary and subject to change. Sources: [1] NMFS, 2014, [2] U.S. Census Bureau.

Bigeye tuna exports and Atlantic landings are given in Table 5.14. Atlantic landings have been increasing since 2008, but are still below the 2006 high of 991 mt. Annually, bigeye tuna exports include more fresh than frozen product, except in 2008 and 2012 when exports of frozen product were greater (318 mt and 386 mt, respectively). Amounts of both fresh and frozen exports in 2013 (147 mt, 25 mt respectively) dropped substantially from values in 2012 (293 mt and 386 mt, respectively). The total value and amount of bigeye exports in 2012 are the highest in the time series.

Table 5.14 U.S. Atlantic Landings and Total U.S. Exports of Bigeye Tuna (2003-2013)

Year	Atlantic Landings (mt ww)[1]	U.S. Exports (from all ocean areas)[2]					
		Fresh		Frozen		Total for all Exports	
		Amount (mt)	Value ($ million)	Amount (mt)	Value ($ million)	Amount (mt)	Value ($ million)
2003	480	255	0.47	40	0.08	295	0.56
2004	419	361	1.40	48	0.10	410	1.51
2005	484	431	1.95	50	0.12	481	2.07
2006	991	223	1.69	76	0.20	299	1.89
2007	527	128	1.38	65	0.14	193	1.52
2008	489	145	1.72	318	0.96	462	2.68
2009	515	121	1.53	78	0.19	199	1.72
2010	571	141	1.96	37	0.11	179	2.07
2011	719	199	2.13	44	0.13	243	2.26
2012	867	293	2.38	386	1.14	679	3.52
2013	880	147	1.36	25	0.13	172	1.49

Note: Landings may be calculated on a calendar or fishing year basis; exports may be in whole (ww) or product weight (dw); data are preliminary and subject to change. Sources: [1]NMFS, 2014, [2]U.S. Census Bureau.

Shark Exports

Export data for sharks are gathered by the Census Bureau, and include trade data for sharks from any ocean area of origin. Shark exports are not categorized to the species level, with the exception of spiny dogfish, and are not identified by specific product code other than fresh or frozen meat and fins. Due to the popular trade in shark fins and their high relative value compared to shark meat, a specific HTS code was assigned to shark fins in 1998. It should be noted that there is no tracking of other shark products besides meat and fins. Therefore, NMFS cannot track trade in shark leather, oil, or shark cartilage products.

Table 5.15 indicates the magnitude and value of shark exports by the United States from 2003 – 2013. Exports of shark fins were lowest in 2008 and 2012 (11 mt), followed by 2013 (12 mt). The price of shark fins was greatest in 2011 ($100.67/kg). Also of note is the dramatic increase in export of frozen shark products in 2008 and the decrease in 2011 to the lowest value in the time series and the sharp increase again in 2013.

Table 5.15 Amount and Value of U.S. Shark Products Exported (2003-2013)

	Dried Shark Fins			Non-specified Fresh Shark			Non-specified Frozen Shark			Total for All Exports	
Year	Amount (mt)	Value ($ MM)	Value ($/kg)	Amount (mt)	Value ($ MM)	Value ($/kg)	Amount (mt)	Value ($ MM)	Value ($/kg)	Amount (mt)	Value ($ MM)
2003	45	4.03	87.79	837	1.31	1.57	592	1.34	2.28	1,476	6.70
2004	63	3.02	47.53	536	1.18	2.21	472	0.98	2.09	1,071	5.18
2005	31	2.37	76.93	377	1.03	2.73	494	1.06	2.15	902	4.46
2006	34	3.17	94.66	816	1.62	1.99	747	1.38	1.85	1,597	6.17
2007	19	1.78	93.68	502	1.05	2.09	695	1.35	1.94	1,216	4.18
2008	11	0.69	63.00	559	1.21	2.16	4,122	7.21	1.75	4,692	9.11
2009	56	2.82	50.36	254	0.72	2.83	320	1.33	4.16	630	4.87
2010	36	2.89	80.28	222	0.67	3.02	244	0.52	2.11	502	4.08
2011	15	1.51	100.67	333	0.89	2.66	59	0.22	3.77	407	2.62
2012	11	0.99	91.75	436	1.08	2.47	106	4.52	4.28	1,501	6.58
2013	12	0.79	65.63	196	0.57	2.90	1043	5.21	5.00	1,250	6.57

$ MM – millions of dollars. Note: Exports may be in whole (ww) or product weight (dw); data are preliminary and subject to change. Source: U.S. Census Bureau.

Swordfish Exports

Swordfish HTS categories were modified in 2007 and again in 2012. The low cost and year round availability of swordfish imports into the United States are believed to have reduced the marketability of U.S. domestic swordfish, and created a modest export market for U.S. product in recent years (i.e., since 2007, Table 5.16).

Table 5.16 Amount and Value of U.S. Swordfish Product Exported (2007-2013)

	Swordfish Fillet				Swordfish				Swordfish Meat					
	Fresh		Frozen		Fresh		Frozen		Fresh		Frozen		Total	
Year	Amount (mt)	Value ($ MM)	Amount (mt)	Value ($ MM)	Amount (mt)	Value ($ MM)	Amount (mt)	Value ($ MM)	Amount (mt)	Value ($ MM)	Amount (mt)	Value ($ MM)	Amount (mt)	Value ($ MM)
2007	38	0.33	11	0.08	135	0.91	11.0	0.04	-	-	216.0	0.69	412	2.1
2008	24	0.25	48	0.34	121	0.89	1.2	0.01	-	-	154.0	0.88	349	2.4
2009	43	0.38	19	0.23	133	0.81	12.1	0.04	-	-	24.0	0.13	231	1.6
2010	98	0.71	16	0.15	134	0.78	0.6	0.01	-	-	3.0	0.02	252	1.7
2011	32	0.26	31	0.28	134	0.80	72.4	0.45	-	-	0.5	0.01	269	1.8
2012	0	0.01	4	0.05	141	0.82	10.8	0.09	7.0	0.09	4.5	0.03	168	1.1
2013	0	0	18	0.09	160	0.87	13.0	0.13	2.6	0.04	2.4	0.02	196	1.2

$ MM – in millions of dollars. Source: U.S. Census Bureau.

Re-exports of Atlantic HMS

For purposes of international trade tracking of HMS, the term "re-export" refers to a product that has been entered for consumption into the United States and then exported to another country, with or without further processing in the United States (from 50 CFR Part 300, Subpart M, International Trade Documentation and Tracking Programs for HMS). For most HMS species for most years, re-export activity is a small fraction of export activity and well below relative reference points of 1,000 mt and/or one million dollars annually. Re-exports of yellowfin tuna (fresh or frozen) and shark fins most frequently exceed these values. Annual re-export figures in excess of these relative reference points are given in Table 5.17.

In previous editions of SAFE reports, bluefin tuna re-exports for 2003-2005 reflected a great deal of transshipment from Mexico through the United States to Japan. Implementation of the HMS ITP regulations in 2005 (69 FR 67268, November 17, 2004) changed the way re-exports and transshipments were distinguished. Table 5.18 shows re-exports of bluefin tuna since 2003, and is updated to reflect these changes for previous years. Re-exports of bluefin tuna in 2013 were particularly high.

Table 5.17 Re-exports of HMS (Excluding Bluefin Tuna) in Excess of 1000 mt and/or One Million U.S. Dollars (2004–2013)

Year	Product	Amount (mt)	Value ($ million)
2004	Shark fins, dried	29	1.84
2005	Yellowfin tuna, fresh	123	2.30
	Shark fins, dried	34	1.53
2006	Yellowfin tuna, fresh	208	2.62
2007	Yellowfin tuna, fresh	208	2.91
	Yellowfin tuna, frozen	506	1.80
2008	Yellowfin tuna, fresh	224	3.40
	Shark fins, dried	26	1.37
2009	Yellowfin tuna, fresh	162	2.18
2010	Yellowfin tuna, fresh	130	1.88
	Yellowfin tuna, frozen	340	1.12
2011	Yellowfin tuna, fresh	117	1.85
	Swordfish fillet, frozen	302	2.70
	Shark fins, dried	23	1.42
2012	Yellowfin tuna, fresh	123	2.26
	Yellowfin tuna, frozen	515	1.63
	Shark fins*	41	1.86
	Shark, unspecified, frozen	405	1.46
2013	Yellowfin tuna, fresh	102	1.80

* In 2012, the product classification "shark fin, dried" in the HTS was renamed "shark fins." Source: U.S. Census Bureau.

Summary of Atlantic HMS Exports

As indicated in the previous section, the value of HMS exports (from all ocean areas combined) is nationally dominated by tuna products. In 2013, fresh and frozen tuna products

accounted for 19,548 mt dw or 1.4 percent of the 1,380,271 mt dw of fresh and frozen seafood products exported from the United States, as indicated in *Fisheries of the United States, 2013.* The value of these HMS products accounted for $60.2 million, out of a national total of $4.7 billion.

Data reflecting international trade of HMS species harvested from all ocean areas are of limited value for describing trade of HMS harvested from the Atlantic Ocean. For example, Atlantic landings of albacore tuna (commercial and recreational) for 2013 were reported in the 2014 U.S. National Report to ICCAT as 599 mt (Table 5.11). National trade data show that over 15,251 mt of albacore were exported in 2013, indicating the majority of albacore exports were Pacific Ocean product. Trade tracking programs such as the bluefin tuna, swordfish, and bigeye tuna consignment document programs are more accurate for tracking the international disposition of Atlantic HMS.

5.3.2 U.S. Imports of HMS

All import shipments must be reported to and cleared by CBP. "General" imports are reported when a commodity enters the country, and "consumption" imports consist of entries into the United States for immediate consumption combined with withdrawals from CBP bonded warehouses. "Consumption" import data reflect the actual entry of commodities originating outside the United States into U.S. channels of consumption. As discussed previously, CBP data for certain products are provided to NMFS for use in implementing consignment document programs. U.S. Census Bureau import data are used by NMFS as well.

Atlantic and Pacific Bluefin Tuna Imports

United States imports and re-exports of bluefin tuna for 2003 through 2013, as reported through both CBP and BCD program data, are shown in Table 5.18.

Table 5.18 U.S. Imports and Re-exports of Atlantic and Pacific Bluefin Tuna (2003–2013)

	NMFS BFT Catch Document Program		U.S. Customs and Border Protection Data	
Year	Imports (mt)	Re-exports (mt)	Imports (mt)	Value ($ million)
2003	649.9	38.4	780.3	11.67
2004	823.4	17.1	886.1	15.25
2005	966.1	10.4	1,064.0	19.96
2006	791.5	18.5	865.2	17.05
2007	584.6	17.7	697.1	13.97
2008	412.7	16.8	487.1	11.91
2009	407.7	33.6	476.8	10.29
2010	569.5	61.6	682.5	15.75
2011	442.5	35.1	555.4	14.01
2012	400.2	25.9	770.4	14.74
2013	568.9	71.3	1,177.5	20.52

Note: Most imports of bluefin tuna (BFT) were in dressed form, and some were round and gilled/gutted fish, fillets or belly meat (dw); data are preliminary and subject to change. Southern BFT trade was included in figures for Atlantic and Pacific BFT trade prior to 2002. Sources: NMFS Bluefin Tuna Catch Document Program and U.S. Customs and Border Protection.

The rise in popularity of sashimi in the United States may have generated the increase in imports of bluefin tuna in the mid part of the decade, as seen in Table 5.18. Dealers have reported an expanded domestic market for both locally-caught and imported raw tuna. U.S. consumption of bluefin tuna (landings + imports – exports – re-exports) generally increased from 1996 to a high of approximately 800 mt in 2005, and generally ranged between 400 and just over 500 mt since 2008, with another spike in 2013 (Figure 5.4). Consumption of domestic landings has been fairly consistent, ranging between about 100 mt to 200 mt per year. Consumption of imported bluefin tuna is more variable and ranges from a low in 1997 of less than 50 mt to a high in 2006 of almost 700 mt.

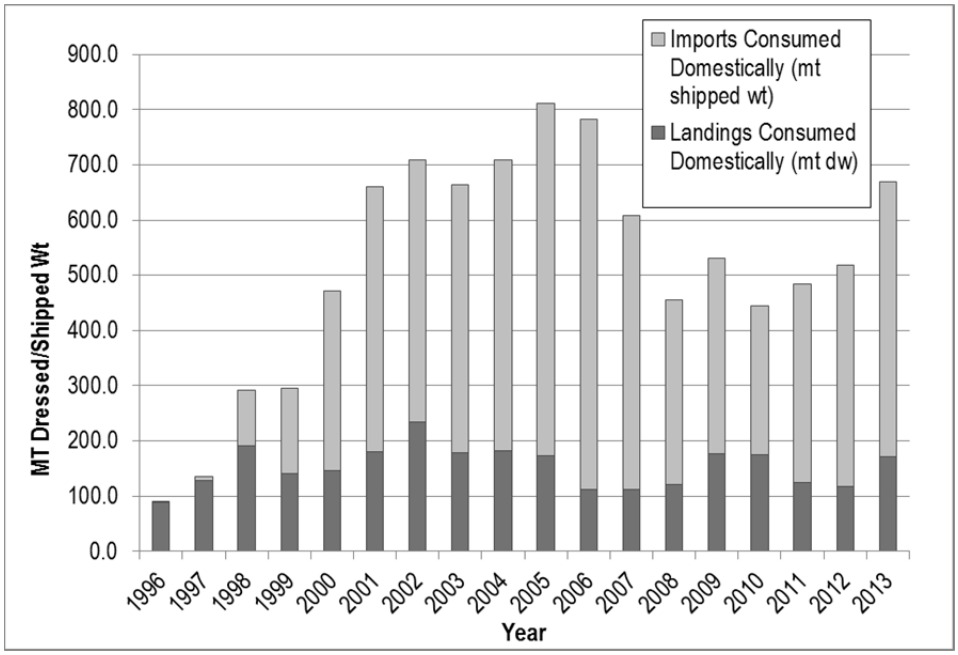

Figure 5.4 U.S. Annual Consumption of Atlantic Bluefin Tuna, by Imports and U.S. Landings (1996-2013)

Annual U.S. imports, re-exports, exports (mt shipped wt), and landings (mt dw) are also depicted. Consumption = landings + imports – exports – re-exports.

Figure 5.5 shows U.S. domestic landings of Atlantic bluefin tuna and trade of bluefin tuna since 1996. From 2004 through 2013, the United States imported more bluefin tuna than it exported (except for 2010). This trade gap was greatest between 2005 and 2007, and increased again in 2013.

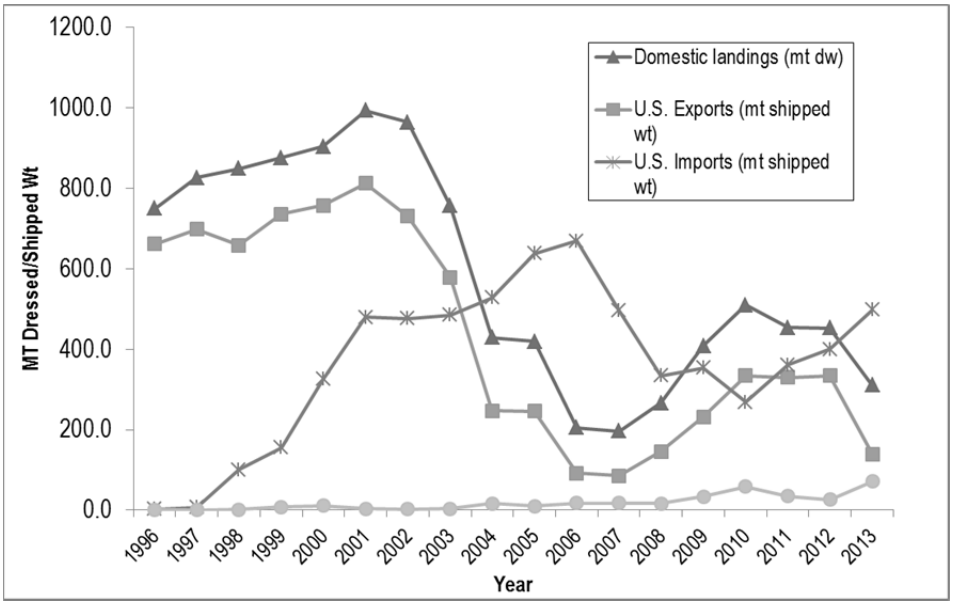

Figure 5.5 U.S. Domestic Landings (mt dw) and Trade (mt shipped wt) of Bluefin Tuna (1996-2013)

Other Tuna Imports

CBP collects species-specific import information for bigeye tuna, grouped to include all ocean areas. The total amount of bigeye tuna imports has ranged between 3,498 (2011) and 8,059 mt (2008) over the time series, as shown in Table 5.19. Total imports of fresh bigeye since 2010 have been below the eleven year annual average of 6.114 mt. .

Table 5.19 U.S. Imports of Bigeye Tuna from All Ocean Areas Combined (2003-2013)

Year	Fresh		Frozen		Total for all Imports	
	Amount (mt)	Value ($ million)	Amount (mt)	Value ($ million)	Amount (mt)	Value ($ million)
2003	7,312	51.01	560	1.48	7,872	52.49
2004	6,752	49.10	1,175	2.62	7,928	51.73
2005	5,040	38.18	1,539	3.33	6,579	41.51
2006	4,920	36.55	1,523	3.15	6,442	39.70
2007	5,617	42.30	1,512	3.19	7,129	45.49
2008	5,462	41.43	2,597	5.31	8,059	46.74
2009	5,459	41.72	1,125	2.36	6,584	44.08
2010	4,025	32.39	316	0.73	4,340	33.12
2011	3,011	26.72	487	1.01	3,498	27.73
2012	3,723	33.43	580	1.22	4,304	34.65
2013	4,023	35.50	498	1.02	4,521	36.52

Note: Imports may be whole weight (ww) or product weight (dw); data are preliminary and subject to change.
Source: U.S. Census Bureau.

Annual yellowfin tuna imports into the United States for all ocean areas combined are given in Table 5.20. As indicated by the data in this section, yellowfin tuna products are imported in the greatest quantity of all fresh and frozen tuna products. The annual value and total amount of yellowfin imports had generally increased from 2003 to 2007 and have been lower since then. Most imported yellowfin products are fresh. The least amount of yellowfin imported during this time series was in 2009.

Table 5.20 U.S. Imports of Yellowfin Tuna from All Ocean Areas Combined (2003–2013)

Year	Fresh		Frozen		Total for all Imports	
	Amount (mt)	Value ($ million)	Amount (mt)	Value ($ million)	Amount (mt)	Value ($ million)
2003	15,299	94.03	5,579	39.67	20,878	133.71
2004	15,624	99.41	5,833	35.35	21,457	134.96
2005	17,064	116.58	6,002	46.89	23,066	163.47
2006	17,792	126.47	5,442	42.78	23,234	169.25
2007	17,985	137.42	5,506	44.26	23,492	181.69
2008	15,904	129.59	3,847	27.97	19,751	157.56
2009	14,199	112.34	2,868	24.73	17,067	137.07
2010	15,985	128.69	2,077	16.91	18,062	145.60
2011	15,635	141.83	2,398	17.56	18,033	159.39
2012	15,829	152.66	2,076	25.84	17,905	178.52
2013	16,024	156.49	2,602	24.69	18,626	181.18

Note: Imports may be whole weight (ww) or product weight (dw); data are preliminary and subject to change.
Source: U.S. Census Bureau.

The amount of fresh and frozen albacore imports from all ocean areas were greatest in 2003 (Table 5.21) and has remained relatively low compared to 2003 quantities. In 2003, albacore imports were valued at $30.02 million while in 2005 the value dropped to $5.3 million, and has remained relatively low. Import amounts and value have been fairly stable over the last

several years, withsmall upticks in 2011 and 2013. Products in airtight containers (e.g., cans or foil pouches) are not included in these data.

Table 5.21 U.S. Imports of Albacore Tuna from All Ocean Areas Combined (2003-2013)

	Fresh		Frozen		Total for all Imports	
Year	Amount (mt)	Value ($ million)	Amount (mt)	Value ($ million)	Amount (mt)	Value ($ million)
2003	1,062	4.11	12,569	25.90	13,632	30.02
2004	1,004	3.12	4,943	11.67	5,947	14.80
2005	706	2.38	1,016	2.96	1,722	5.34
2006	876	3.54	667	1.71	1,543	5.25
2007	945	3.86	718	1.98	1,664	5.86
2008	703	2.95	1,632	4.73	2,335	7.68
2009	718	3.07	1,493	3.46	2,211	6.53
2010	519	2.19	1,860	5.17	2,380	7.36
2011	669	3.05	3,794	7.17	4,462	10.22
2012	748	3.53	1,178	2.61	1,926	6.14
2013	858	3.57	2,199	4.27	3,057	7.84

Note: Imports may be whole weight (ww) or product weight (dw); data are preliminary and subject to change.
Source: U.S. Census Bureau.

Skipjack tuna imports into the United States are comprised mainly of frozen product (Table 5.22). The amount of skipjack imports is variable over this time series, ranging from a low of 112 mt in 2004 to a high of 1,023 mt in 2006. Import value was the highest for 2012 ($1.21 million), which was the year with the second largest import amount (890 mt) for the time series. Products in airtight containers (e.g., cans or foil pouches) are not included in these data.

Table 5.22 U.S. Imports of Skipjack Tuna from All Ocean Areas Combined (2003–2013)

	Fresh		Frozen		Total for all Imports	
Year	Amount (mt)	Value ($ million)	Amount (mt)	Value ($ million)	Amount (mt)	Value ($ million)
2003	0	0	224	0.43	224	0.43
2004	<1	<0.01	110	0.26	112	0.27
2005	0	0	652	0.67	652	0.67
2006	140	0.14	883	0.84	1,023	0.98
2007	31	0.06	835	0.73	866	0.79
2008	14	0.02	685	0.77	699	0.79
2009	20	0.04	498	0.63	519	0.67
2010	36	0.09	542	0.79	578	0.87
2011	2	0.05	594	0.92	595	0.96
2012	23	0.05	866	1.16	890	1.21
2013	38	0.11	272	0.51	310	0.62

Note: Imports may be whole weight (ww) or product weight (dw); data are preliminary and subject to change.
Source: U.S. Census Bureau.

Swordfish Imports

Table 5.23 summarizes swordfish import data collected by NMFS' Swordfish Statistical Document Program for the 2013 calendar year. According to these data, most swordfish imports were Pacific Ocean product from Central and South America. For Atlantic product, most North Atlantic imports came from Canada, and South Atlantic product came from Brazil and South Africa. CBP data located at the bottom of the table reflect a larger amount of imports than reported by the import monitoring program, and may be used by NMFS staff to follow up with importers, collect statistical documents that have not been submitted, and enforce dealer reporting requirements.

Table 5.23 U.S. Imports of Swordfish, by Flag of Harvesting Vessel and Area of Origin (2013)

Flag of Harvesting Vessel	Ocean Area of Origin							Total (mt dw)
	Atlantic (mt dw)	North Atlantic (mt dw)	South Atlantic (mt dw)	Pacific (mt dw)	Western Pacific (mt dw)	Indian (mt dw)	Not Provided (mt dw)	
Australia	-	-	-	1.18	167.64	-	1.66	170.48
Brazil	2.10	-	482.65	-	-	-	2.37	487.12
Canada	-	1,016.63	-	-	-	-	-	1,016.63
Chile	-	-	-	454.14	-	-	8.56	462.70
China	-	-	34.51	85.99	-	18.38	-	138.88
Chinese Taipei	-	-	6.40	243.18	-	319.83	-	569.41
Costa Rica	-	-	-	754.23	-	-	-	754.23
Ecuador	-	-	-	1,623.21	-	1.52	-	1,624.73
Fiji Islands	-	-	-	38.34	14.63	-	6.59	59.56
France	-	9.60	-	-	-	-	-	9.60
French Polynesia	-	-	-	1.98	-	-	-	1.98
Indonesia	-	-	-	-	-	292.57	40.95	333.52
Marshall Islands	-	-	-	1.54	-	-	-	1.54
Mexico	-	-	6.00	319.07	-	-	4.00	329.07
New Zealand	-	-	-	-	354.60	-	1.49	356.09
Nicaragua	-	-	-	9.61	-	-	-	9.61
Panama	-	-	-	420.77	-	-	-	420.77
Philippines	-	-	-	-	-	14.92	-	14.92
Seychelles	-	-	-	-	-	13.39	-	13.39
South Africa	0.18	-	125.40	1.34	-	122.58	8.52	258.02
Spain	-	-	-	36.56	-	-	-	36.56
Thailand	-	-	-	-	-	-	25.00	25.00
Trinidad & Tobago	-	5.66	0.19	-	-	-	0.48	6.33
Turks and Caicos Islands	-	4.08	-	-	-	-	-	4.08
Vanuatu	-	-	-	28.30	-	-	-	28.30
Vietnam	-	-	-	261.18	-	-	-	261.18
Total Imports Reported by SDs	2.28	1,035.97	655.15	4,280.62	563.87	783.19	99.62	7,393.70
Total Imports Reported by U.S. Customs & Border Protection								8,407.27
Total Imports Not Reported by SDs								1,013.57

Source: NMFS Swordfish Statistical Document (SD) Program.

Table 5.24 indicates the amount and value of swordfish products imported by the United States from 2003 to 2013, as recorded by the U.S. Census Bureau, for all ocean areas combined. New import product categories were added in 2007. The amount of each product imported per year and annual totals for product and value were fairly consistent over the past several years. Total imports have generally fallen since their peak in 2003.

Table 5.24 Imported Swordfish Products (2003-2013)

Year	Fresh (mt)			Frozen (mt)					Total for All Imports	
	Steaks		Other	Fillets	Steaks			Other	(mt)	($ million)
2003	147		8,079	3,929	433			560	13,150	75.62
2004	157		6,568	3,261	387			351	10,726	70.95
2005	172		6,388	2,957	367			304	10,187	77.17
2006	77		6,830	2,875	351			201	10,334	75.63
						Meat				
	Fillets*	Steaks	Other	Fillets	Steaks	> 6.8 kg*	≤ 6.8 kg*	Other		
2007	174	84	5,412	2,520	171	118	737	205	9,422	70.85
2008	96	13	5,658	2,673	170	55	207	88	8,962	68.98
2009	53	10	5,312	1,632	112	96	23	33	7,272	55.85
2010	125	2	5,228	2,077	153	277	45	31	7,939	68.33
2011	74	1	5,060	2,116	139	1,384	471	12	9,258	68.64
2012	13	2	5,478	2,013	604	824	42	14	8,992	77.01
2013	31	2	6,009	1,394	457	182	4	12	8,091	71.38

* HTS classification changed as of 2007. NOTE: Imports may be whole weight (ww) or product weight (dw); data are preliminary and subject to change. Source: U.S. Census Bureau.

Shark Imports

Similar to HMS imports other than bluefin tuna, swordfish, and frozen bigeye tuna, NMFS does not require shark importers to collect and submit information regarding the ocean area of catch. Shark imports are also not categorized by species, and lack specific product information on imported shark meat such as the proportion of fillets and steaks. The condition of shark fin imports (e.g., wet, dried, or further processed products such as canned shark fin soup) is also not collected. There is no longer a separate tariff code for shark leather, so its trade is not tracked by CBP or Census Bureau data.

Based on a report from 1996, the United States was an important trans-shipment port for shark fins, which were imported wet, and then processed and exported dried. At that time, U.S.-caught shark fins were exported to Hong Kong or Singapore for processing, and then imported back into the United States for consumption by urban-dwelling Asian Americans (Rose, 1996). In recent years, it appears that the importance of the United States as a transshipment port has decreased since shark fin imports have decreased (

Table 5.25).

Table 5.25 summarizes Census Bureau data on shark imports for 2003 through 2013. Imports of fresh and frozen shark have decreased significantly over time while imports of shark fins have been variable. As of July 2, 2008, shark fin importers, exporters, and re-exporters are required to be permitted under NMFS' HMS ITP regulations (73 FR 31380). Permitting of shark fin traders was implemented to assist in enforcement and monitoring trade of this valuable commodity.

Table 5.25 U.S. Imports of Shark Products from All Ocean Areas Combined (2003-2013)

	Shark Fins Dried		Non-specified Fresh Shark		Non-specified Frozen Shark		Total for All Imports	
Year	(mt)	($ million)	(mt)	($ million)	(mt)	($ million)	(mt)	($ million)
2003	11	0.01	515	0.72	100	0.99	626	1.82
2004	14	0.34	650	1.00	156	2.35	821	3.70
2005	27	0.75	537	1.02	147	2.27	711	4.04
2006	28	1.38	338	0.68	93	1.35	459	3.41
2007	29	1.68	548	1.03	174	1.04	751	3.75
2008	29	1.74	348	0.72	189	1.88	566	4.34
2009	21	0.97	180	0.37	125	1.50	326	2.83
2010	34	1.18	114	0.33	34	1.16	182	2.66
2011	58	1.79	72	0.22	32	1.20	162	3.21
2012*	43	0.77	88	0.30	9	0.07	141	1.14
2013	63	0.74	15	0.46	3	0.05	219	1.25

Note: Imports may be whole weight (ww) or product weight (dw); data are preliminary and subject to change. * In 2012, the product classification "shark fin, dried" in the HTS was renamed "shark fins." Source: U.S. Census Bureau.

5.3.3 The Use of Trade Data for Management Purposes

Trade data has been used in a number of ways to support the international management of HMS. When appropriate, the SCRS uses trade data on bluefin tuna, swordfish, bigeye tuna, and yellowfin tuna that are submitted to ICCAT as an indication of landings trends. These data can then be used to augment estimates of fishing mortality of these species, which improves scientific stock assessments. Trade data can also be used to assist in assessing compliance with ICCAT recommendations and identify those countries whose fishing practices diminish the effectiveness of ICCAT conservation and management measures. For examples of the use of trade data, please see this section of the 2011 HMS SAFE Report.

Table 5.26 Summary and Current Status of ICCAT-Recommended Trade Sanctions for Bluefin Tuna, Swordfish, and Bigeye Tuna Implemented by the United States

Country	Species	ICCAT-Recommended Sanction	U.S. Sanction Implemented	ICCAT Sanction Lifted	U.S. Sanction Lifted
Panama	Bluefin tuna	1996	1997	1999	2000
Honduras	Bluefin tuna	1996	1997	2001	2004
	Bigeye tuna	2000	2002	2002	2004
	Swordfish	1999	2000	2001	2004
Belize	Bluefin tuna	1996	1997	2002	2004
	Swordfish	1999	2000	2002	2004
	Bigeye tuna	2000	2002	2002	2004
Equatorial Guinea	Bluefin tuna	1999	2000	2004	2005
	Bigeye tuna	2000	2002	2004	2005
Cambodia	Bigeye tuna	2000	2002	2004	2005
St. Vincent & the Grenadines	Bigeye tuna	2000	2002	2002	2004
Bolivia	Bigeye tuna	2002	2004	2011	2012
Sierra Leone	Bluefin tuna	2002	2004	2004	2005
	Bigeye tuna	2002	2004	2004	2005
	Swordfish	2002	2004	2004	2005
Georgia	Bigeye tuna	2003	2004	2011	2012

5.4 Recreational Fisheries

HMS recreational fishing provides significant positive economic impacts to coastal communities that are derived from individual angler expenditures, recreational charters, tournaments, and the shoreside businesses that support those activities.

The Deepwater Horizon/BP Oil Spill in the Gulf of Mexico affected recreational fisheries in the Gulf of Mexico due to a series of fishery closures of various sizes that began on May 2, 2010 and continued until April 19, 2011. More information about the Deepwater Horizon/BP Oil Spill is available at http://sero.nmfs.noaa.gov/deepwater_horizon_oil_spill.htm. The impacts of the oil spill and related fishery closures continue to be investigated.

5.4.1 Recreational Angling

A report summarizing the results of the 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation was released in August 2012. This report, which is the 12th regarding a series of surveys that has been conducted about every 5 years since 1955, provides relevant information such as the number of anglers, expenditures by type of fishing activity, number of participants and days of participation by animal sought, and demographic characteristics of participants. The final national report and the data CD-ROM are available from the U.S. Fish and Wildlife Service (USFWS). More information on the 2011 national survey is available at http://www.fws.gov/pacific/news/news.cfm?id=2144375111.

In 2011, NMFS conducted the National Marine Recreational Fishing Expenditure Survey to collect national level data on trip and durable good expenditures related to marine recreational fishing, and estimate the associated economic impact (Lovell et al., 2013). Nationally, marine anglers were estimated to have spent $4.4 billion on trip related expenses (e.g., fuel, ice, and

bait), and $19 billion on fishing equipment and durable goods (e.g., fishing rods, tackle, and boats). Using regional input-output models, these expenditures were estimated to have generated $56 billion in total economic impacts, and supported 364 thousand jobs in the United States in 2011.

This survey also included a separate survey of HMS Angling permit holders from the LPS region (Maine to Virginia) plus North Carolina (Hutt et al., 2014). Estimated trip-related expenditures and the resulting economic impacts for HMS recreational fishing trips are presented in Table 5.27. For the HMS Angler Expenditure Survey, randomly selected HMS Angling permit holders were surveyed every two months, and asked to provide data on the most recent fishing trip in which they targeted HMS. Anglers were asked to identify the primary HMS they targeted, and their expenditures related to the trip. Of the 2,068 HMS anglers that returned a survey, 1,001 anglers indicated they targeted a species of tuna (i.e., bluefin, yellowfin, bigeye, or albacore tuna) on their most recent private boat trip, or simply indicated they fished for tuna in general without identifying a specific species. Of the rest of those surveyed, 88 reported on trips targeting billfish (i.e., blue marlin, white marlin, sailfish), 105 reported on trips targeting shark (i.e., shortfin mako, thresher shark, blacktip shark), and 874 either reported on trips that did not target HMS or failed to indicate what species they targeted. Average trip expenditures ranged from $534/trip for tuna trips to $900 for billfish trips. Boat fuel was the largest trip-related expenditure for all HMS trips, and made up about 73 percent of trip costs for billfish trips, which is not unexpected given the predominance of trolling as a fishing method for billfish species such as marlin. Total trip-related expenditures for 2011 were estimated by expanding average trip-related expenditures by estimates of total directed boat trips per species group from the LPS and MRIP. Total expenditures were then divided among the appropriate economic sectors, and entered into an input-output model to estimate total economic output and employment supported by the expenditures within the study region (coastal states from Maine to North Carolina). Overall, $23.2 million of HMS angling trip-related expenditures generated approximately $31.3 million in economic output, and supported 216 full time jobs from Maine to North Carolina in 2011.

Table 5.27 HMS Recreational Fishing Trip Related Expenditures and Economic Impacts for Directed HMS Private Boat Trips (ME - NC, 2011)

Variable	Tuna Trips	Billfish Trips	Shark Trips	All HMS Trips
Sample size by species targeted	1,001	88	105	1,194
Average trip expenditures	$534	$900	$567	$587
Total directed HMS private boat trips *	27,648	5,123	6,669	39,440
Total trip-related expenditures	$14,775,000	$4,612,000	$3,781,000	$23,168,000
Total economic output	$19,864,000	$6,036,000	$5,443,000	$31,343,000
Employment (Full time job equivalents)	136	39	41	216

Sources: 2011 mail survey of Atlantic HMS Angling permit holders and *Large Pelagics Survey.

In addition to collecting data on HMS angling trip expenditures and economic impacts, the 2011 expenditure survey also collected data on HMS angler expenditures on durable goods used for marine angling (i.e., boats, vehicles, tackle, electronics, second homes). HMS anglers were found to spend $10,410 on average for durable goods and services related to marine recreational fishing, of which $5,516 could be attributed to HMS angling (based on their ratio of

HMS trips to total marine angling trips). The largest expenditures items for marine angler durable goods among HMS anglers were for new boats ($3,178), boat storage ($1,258), and boat maintenance ($1,085). HMS anglers were estimated to have spent a total of $76 million on durable goods for HMS angling which in turn were estimated to generate $116 million in economic output, and support 727 jobs from Maine to North Carolina in 2011 (Hutt et al., 2014).

On May 9, 2014, NMFS announced that it will begin work on the 2014 National Marine Recreational Fishing Expenditure Survey. The upcoming survey will be conducted in two parts. The first part of the survey will collect information on expenditures and durable goods from randomly selected anglers with saltwater fishing licenses in coastal states. The second part of the survey, focusing on trip-related expenditures, will be conducted in 2016. The 2014 expenditure survey will also include a targeted survey of approximately 1,200 Atlantic Highly Migratory Species (HMS) Angling permit holders. Such a targeted survey will provide expenditure data on a unique group of anglers that are typically under-represented in national surveys.

5.4.2 Atlantic HMS Tournaments

For detailed information about HMS tournaments, please see Sections 4.4.2 (landings) and 8.1 (HMS tournament characterization) of this document, the 2006 Consolidated HMS FMP, and the 2011 HMS SAFE Report.

5.4.3 Atlantic HMS Charter and Party Boat Operations

At the end of 2004 and 2012, NMFS collected market information regarding advertised charterboat rates. The analysis of this data focused on advertised rates for full day charters. Full day charters vary from 6 to 14 hours long with a typical trip being 10 hours. The average price for a full day boat charter was $1,053 in 2004 and $1,200 in 2012. Sutton et al., (1999) surveyed charterboats throughout Alabama, Mississippi, Louisiana, and Texas in 1998 and found the average charterboat base fee to be $762 for a full day trip. Holland et al. (1999) conducted a similar study on charterboats in Florida, Georgia, South Carolina, and North Carolina and found the average fee for full day trips to be $554, $562, $661, and $701, respectively. Comparing these two studies conducted in the late 1990s to the average advertised daily HMS charterboat rate in 2004 and 2012, it is apparent that there has been a significant increase in charterboat rates.

In 2013, NMFS executed a logbook study to collect cost and earnings data on charter and headboat trips targeting HMS throughout the entire Atlantic HMS region (Maine to Texas). The HMS Cost and Earning Survey commenced in July 2013, and ended in November 2013. Preliminary data indicate that only 55 percent of HMS Charter/Headboat permit holders reported actively taking for-hire trips, with the remaining 45 percent indicating that they either did not actively take for-hire trips, or no longer possessed the vessel tied to the permit. While economic data are not yet available from the study, preliminary data on the number and percentage of trips by species targeted per region and overall are presented in Table 5.28. Primary target species varied considerably across regions for charter/headboat trips with yellowfin tuna (45%) being the primary target species overall. Regionally, bluefin tuna (73%) were the primary target species in the northeast Atlantic followed by pelagic sharks (42%) (i.e., shortfin mako, blue sharks, thresher sharks). In the mid-Atlantic region, HMS trips primarily targeted yellowfin (76%) and bigeye tuna (69%); whereas charter/headboat trips in the south Atlantic primarily targeted yellowfin tuna (53%), sailfish (50%), and marlin (48%). In Florida (analyzed separately here as

preliminary data did not allow for separating trips originating on the Atlantic and Gulf Coasts), the majority of trips targeted species other than HMS (e.g., dolphin fish, wahoo), but 38% percent targeted sailfish. Finally, in the Gulf of Mexico, the majority (60%) of HMS charter/headboat trips targeted coastal sharks.

Table 5.28 Percent of HMS Charter/Headboat Trips by Region and Target Species (2013)

Species	N. Atlantic	Mid-Atlantic	S. Atlantic	Florida	Gulf of Mexico	Overall*
Bluefin tuna	73.1	17.1	3.8	1.1	0.0	7.8
Yellowfin tuna	23.1	76.1	53.3	10.5	38.1	45.1
Albacore tuna	19.2	27.3	7.9	0.0	0.0	8.5
Bigeye tuna	11.5	69.3	2.5	6.3	5.3	14.6
Skipjack tuna	0.0	3.4	7.9	9.5	2.7	6.0
Marlin	11.5	14.8	47.9	12.6	22.1	29.8
Swordfish	11.5	28.4	0.0	12.6	8.0	8.7
Sailfish	0.0	0.0	50.4	37.9	8.9	29.7
Pelagic sharks	42.3	17.1	0.0	0.0	1.8	5.0
Coastal sharks	11.5	4.6	32.9	12.6	60.2	29.7
Other species	15.4	23.9	39.6	56.8	15.9	34.1

North Atlantic includes: RI, MA, NH, and ME. Mid-Atlantic includes: CT, NY, NJ, DE, MD, and VA. South Atlantic includes: NC, SC, and GA. Gulf of Mexico includes: AL, MS, LA, and TX. Florida was reported separately as currently available data did not permit separating Atlantic and Gulf of Mexico trips. * Percentages exceed 100 percent as most trips targeted multiple species.

5.5 Review of Regulations under Section 610 of the Regulatory Flexibility Act

The Regulatory Flexibility Act, 5 U.S.C. 601, requires that Federal agencies take into account how their regulations affect "small entities," including small businesses, small governmental jurisdictions and small organizations. In order to assess the continuing effect of an agency rule on small entities, The Regulatory Flexibility Act contains a provision in Section 610 that requires Federal agencies to review existing regulations on a periodic basis that had or will have a significant economic impact on a substantial number of small entities.

NMFS recently published a plan for this required period review of regulations in the Federal Register (79 FR 53151, September 8, 2014). This plan stated, "NMFS will conduct reviews in such a way as to ensure that all rules for which a Final Regulatory Flexibility Analysis was prepared are reviewed within 10 years of the year in which they were originally issued. By December 31, 2014, NMFS will review all such rules issued during 2007 and 2008." Table 5.29 reviews the Atlantic HMS regulations between 2007 and 2008 using the criteria established in Section 610 of the Regulatory Flexibility Act.

Final rules should be reviewed to determine whether they should be continued without change, or whether they should be amended or rescinded, consistent with the stated objectives of applicable statutes. Section 610 of the Regulatory Flexibility Act requires NMFS to consider the following factors when reviewing rules to minimize any significant economic impact of the rule on a substantial number of small entities:

1. The continued need for the rule;
2. The nature of complaints or comments received concerning the rule from the public;

3. The complexity of the rule;
4. The extent to which the rule overlaps, duplicates, or conflicts with other Federal rules, and , to the extent feasible, with State and local government rules; and
5. The length of time since the rule has been evaluated or the degree to which technology, economic conditions, or other factors have changed in the area affected by the rule.

Table 5.29 Regulatory Flexibility Act Section 610 Review of Atlantic Highly Migratory Species Regulations between 2005 and 2006

Name of Action, date, and FR Cite	Atlantic Highly Migratory Species; Atlantic Commercial Shark Management Measures; Gear Operation and Deployment; Complementary Closures. RIN 0648–AT37 (72 FR 5633; February 7, 2007)
Current Status of Rule (Expired, Rescinded, Superseded, Amended, or Continuing)	Continuing
Description of Management Measures and Complexity	NMFS issued a final rule implementing additional handling, release, and disentanglement requirements for sea turtles and other non-target species caught in the commercial shark bottom longline fishery. These requirements increased the amount of handling, release, and disentanglement gear that are required to be on bottom longline (BLL) vessels and were intended to reduce post hooking mortality of sea turtles and other nontarget species consistent with the 2006 Consolidated HMS FMP. This final rule also implemented management measures, consistent with those recommended by the Caribbean Fishery Management Council and implemented by NMFS on October 28, 2005, that prohibit vessels issued HMS permits with bottom longline gear onboard from fishing in six distinct areas off the U.S. Virgin Islands and Puerto Rico, year round. These six closures were intended to minimize adverse impacts to Essential Fish Habitat (EFH) for reef-dwelling species. NMFS considers this rule to be only moderately complex since it just extended current management measures to include additional handling, release and disentanglement requirements, and provided consistency with regional Council measures.
Economic Impacts of Management Measures and Nature of Public Comments	This rule was estimated to have an economic impact of a minimum of $253 to $487 for vessels with a freeboard height of four feet (1.22 m) or less. This range represents the range of low-end and high-end priced gears. Larger economic impacts were expected for Atlantic shark fishermen with vessels with freeboard heights greater than four feet (and costs will be dependent on freeboard height due to variable costs of long-handled dehooking gears). Because of the similarities between the PLL and BLL fisheries and the fact

	that many vessel operators and owners fish with both BLL and PLL gear, this final rule enabled Atlantic shark fishermen with BLL gear onboard to follow the protocols and possess the equipment necessary for the PLL fishery, easing determination of compliance for both fishermen and enforcement. This also provided fishermen with the flexibility to change between PLL and BLL gear without additional cost. The final rule also allowed Atlantic shark fishermen with BLL gear onboard to construct additional equipment themselves provided it meets design specifications, to reduce economic impacts. The cost of dehooking gear and time and effort involved in properly dehooking animals may be offset by gaining efficiency in not having to re-rig fishing equipment, and economic gain from retrieving hooks. Such gain could be substantial given the price of circle hooks. Also, the six closures recommended by the Caribbean Fishery Management Council off the U.S. Virgin Islands and Puerto Rico, prohibit HMS permit holders with BLL gear onboard their vessels, from deploying, or fishing with any fishing gear in these closed areas. These closures were expected to have de minimus impacts on HMS permit holders in the Caribbean region. NMFS received several comments regarding the estimated costs of procuring the required dehooking equipment, both to individuals and to the shark BLL industry as a whole, including: NMFS should emphasize that BLL operators could reduce costs of required equipment by making most of the equipment themselves; and a significant portion of the 284 vessels already have PLL permits and already have the equipment, therefore the estimated economic impact associated with the preferred alternative of $71,900 to $138,400 seems high. In response, NMFS stated that BLL operators may construct dehooking equipment as long as it meets design standards at 50 CFR 635.21(c) and that it assumed that numerous BLL participants already possess some of the equipment required by this rulemaking which would minimize economic impacts of this final rulemaking. NMFS estimated the number of vessel owners that could potentially be impacted by this rulemaking to be 284. This estimate was derived because 284 of the 555 incidental and directed shark permit holders did not have a directed or incidental swordfish permit. An incidental or directed swordfish permit would be necessary to fish with PLL gear and these vessels would already be required to possess, maintain and utilize the equipment and protocols prescribed in the final rulemaking. NMFS agrees that this may be an overestimate, as it does not account for latent effort in BLL and PLL fisheries. However, whether permit holders had been inactive in the recent past would not exempt them from the need to procure the required equipment before fishing in the future. Finally, a comment was received asking NMFS if they were going to subsidize or pay for the purchase of dehooking equipment. NMFS responded that it did not have any plans to subsidize the purchase of dehooking equipment for

	participants in the Atlantic shark BLL fishery and that the costs of compliance with this rulemaking could be minimized by fisherman making some of the required equipment themselves, provided it meets the design standards in 50 CFR 635.21(c).
Overlap with other State or Federal Rules	This final rule does not duplicate, overlap, or conflict with any other Federal rules.
Changes in Technology, Economic Conditions, or Other Factors since Last Evaluation	NMFS is continuing to investigate new gears and technologies to reduce sea turtle interactions and mortalities and has recommended their use, as appropriate, to fishermen. NMFS is not aware of any significant change in the costs associated with acquiring the disentanglement equipment. Since 2006, there has been a steady decline in commercial shark fishery revenues, which largely use BLL gear, from $6.6 million in 2006 to $2.1 million in 2013, but this decline in revenues is mainly attributable to other state and federal management measures designed to address overfishing of several shark species. This overall decline in fishing activity, including a decline in the number of BLL vessels participating in the fishery, has likely adversely impacted the economic conditions of these small businesses.
Recommendation to Continue, Rescind, or Amend and Rationale	This rule is continuing and needed to minimize sea turtle and other non-target mortality associated with shark bottom longline fishing. It is also need to implement measures that are complementary to Caribbean Fishery Management Council recommended closure measures.
Name of Action, date, and FR Cite	Atlantic HMS; U.S. Atlantic Swordfish Fishery Management Measures. RIN 0648–AU86 (72 FR 31688, June 7, 2007)
Current Status of Rule (Expired, Rescinded, Superseded, Amended, or Continuing)	Continuing
Description of Management Measures and Complexity	NMFS issued a final rule to amend regulations governing the North Atlantic swordfish fishery to provide additional opportunities for U.S. vessels to more fully utilize the U.S. North Atlantic swordfish quota, in recognition of the improved stock status of the species. The U.S. North Atlantic swordfish quota is derived from ICCAT recommendations and is implemented under the authority of the MSA and ATCA. For several years prior to the rule, the United States did not fully harvest its available North Atlantic swordfish quota. This final rule increased swordfish retention limits for Incidental swordfish permit holders, and modified recreational swordfish retention limits for HMS Charter/Headboat and Angling category permit holders. It also modified HMS limited access vessel

	upgrading restrictions for vessels concurrently issued certain HMS permits. These actions were necessary to address persistent under-harvest of the domestic North Atlantic swordfish quota, while continuing to minimize bycatch to the extent practicable, so that swordfish are harvested in a sustainable, yet economically viable manner. NMFS considers that this was a moderate to low complexity rule given that it just adjusted retention limits and eased upgrading restrictions.
Economic Impacts of Management Measures and Nature of Public Comments	This action increased the North Atlantic swordfish retention limit for vessels issued valid Incidental swordfish limited access permits to 30 fish per vessel per trip; and for vessels issued valid Incidental swordfish limited access permits that participate in the squid trawl fishery, increased the limit to 15 fish per vessel per trip. This rule provides an opportunity for Incidental swordfish permit holders to land swordfish that might otherwise be discarded, but prevents a large increase in additional directed fishing effort on swordfish. As many as 52 swordfish had been reported discarded on a single trip by Incidental swordfish permit holders, although most trips reported few discards. A 30 fish limit is just below the median number of swordfish that had been landed by Directed swordfish permit holders from 2002 - 2005 (36 fish). The economic benefits associated with this rule were estimated by taking the difference between the value of two swordfish and the value of 30 swordfish. Using the mean weight of swordfish landed in 2005 of 75.7 lb and the mean ex-vessel price of $3.71 per lb in 2005, the estimated value of potentially retaining an additional 28 swordfish under this alternative is $7,864 per vessel per trip. Using logbook records from 2005, it was projected that total annual landings of swordfish could increase from 10,787 to 34,879 lb, if all reported discards were converted to landings, up to 30 fish. Using the average ex-vessel price of $3.71 per lb for 2005, the estimated total value of these additional landings would be $89,381 amongst all active Incidental swordfish vessels per year. This rule also increased the swordfish retention limit from 5 to 15 swordfish for vessels issued valid Incidental swordfish limited access permits that participate in the squid trawl fishery. This tripled the current retention limit for these vessels. From 1998 to 2004, all squid trawl vessels landed an average of 6.3 mt (ww) of swordfish in total per year. Increasing the limit for squid trawl vessels by an additional ten swordfish per trip could potentially increase annual landings by all squid trawl vessels to 18.9 mt (ww) in total per year. This increase of 12.6 mt (ww) of swordfish would be worth a total of $77,487 per year among all squid trawl vessels, based on the same prices and ratios discussed above. This rule also implemented a North Atlantic swordfish retention limit for HMS Charter/headboat vessels of one fish per paying passenger, up to six swordfish per trip for charter vessels and 15 swordfish per trip for headboat

	vessels. This would maintain the current recreational limit of one swordfish per person, but increase the allowable upper retention limit from three to six fish for charter vessels, or from three fish to fifteen fish for headboat vessels. A six-fish upper vessel retention limit for charter vessels was selected for this sector, because these vessels are licensed to carry a maximum of six passengers per trip. Although headboats can carry upwards of 50 passengers, a 15-fish retention limit was analyzed because it would provide a better opportunity for anglers on headboats to land a swordfish, while maintaining a recreational aspect to the charter/headboat fishery. In addition, given the lack of data for swordfish retention by anglers, a 15 fish limit would still preclude potential negative effects on the swordfish stock. In 2005, approximately 25 percent of the swordfish reported landed by Charter/headboat vessels in the HMS non-tournament recreational reporting database were in groups of three fish on the same date. Even though a quarter of the trips may have been limited in the amount of swordfish retained under the existing vessel trip limit, the benefits of raising the limit could extend beyond those trips. The economic benefits would result from additional bookings of charter trips, because the perceived value of a trip for an angler may be increased by the ability to land more fish. The 2004 average daily HMS charterboat rate for day trips was $1,053. The willingness-to-pay for swordfish charter trips is likely to be much higher than this value. Increased charter and headboat bookings could lead to positive economic multiplier impacts to tackle shops, boat dealers, hotels, fuel suppliers, and other associated local and regional businesses. This rule also implemented a North Atlantic swordfish recreational retention limit for HMS Angling category vessels of one fish per person per trip, up to four swordfish per vessel per trip. This alternative maintained the then-existing recreational limit of one swordfish per person, but increased the upper retention limit from three fish to four fish per vessel per trip. A four-fish upper vessel retention limit for angling vessels was selected because it would provide a modest increase in the opportunity to land a swordfish, while maintaining a recreational aspect to the fishery. Because there were 25,238 vessels issued HMS Angling category permits as of February 1, 2006, an increase in the upper retention limit of more than one fish per person on an angling vessel was considered, but rejected, due to concerns about potentially excessive recreational landings. This provision of the rule provides a reasonable opportunity for recreational anglers to land swordfish, and may increase U.S. swordfish landings. Approximately seven percent of the swordfish reported landed by Angling category vessels in the HMS non-tournament recreational reporting database were in groups of three fish on the same day. Therefore, the increase from three to four swordfish per vessel per trip under this

	alternative would likely affect a similar percentage of trips. The economic benefit of this alternative would derive from an increased perceived value of a recreational angling trip, due to the ability to land more fish. Recreational anglers might take more trips, which could lead to some multiplier benefits to tackle shops, boat dealers, hotels, fuel suppliers, and other related businesses. The average expenditure on HMS related trips is estimated to be $122 per person per day based on the recreational fishing expenditure survey add-on to the NMFS' Marine Recreational Fisheries Statistical Survey (MRFSS). The expenditure data include the costs of tackle, food, lodging, bait, ice, boat, fuel, processing, transportation, party/charter fees, access/boat launching, and equipment rental. This rule also established new HMS limited access vessel upgrading and permit transfer upgrading restrictions only for HMS vessels that are authorized to fish with pelagic longline gear for swordfish and tunas (i.e., vessels that concurrently possess Directed or Incidental shark and swordfish permits, and an Atlantic Tunas Longline category permit), equivalent to 35 percent length overall (LOA), gross register tonnage (GRT), and net tonnage (NT), as measured relative to the baseline vessel specifications (i.e., the specifications of the vessel first issued an HMS limited access permit), and remove horsepower upgrading and permit transfer upgrading restrictions for these vessels. This rule was expected to improve the ability of U.S. vessels to fully harvest the domestic ICCAT-recommended swordfish quota, but imposed some limits on vessel upgrading by restricting the universe of potentially impacted entities to certain vessels only, and by limiting the magnitude of allowable upgrades. For an ``average'' 55-foot swordfish vessel, this rule was expected to result in upgrading the permits to vessels between 69 and 74 feet vessel, depending upon whether a vessel has already been upgraded. It was also considered possible that all eligible vessels could be upgraded to increase in size by 25 to 35 percent or, conversely, none of the eligible vessels would be upgraded. Eligible vessel owners would gain the economic benefits associated with having increased operational flexibility to adjust vessel configurations in terms of length and horsepower to best fit their business needs. However, that flexibility would be capped by imposing a 35 percent limit on increases in vessel length, gross tonnage, and net tonnage. A comment was received expressing concern that increasing the Incidental swordfish retention limit would put more swordfish on the market, and therefore have negative economic consequences by reducing the price that Directed swordfish permit holders receive for their swordfish. NMFS recognized that an increase in the volume of incidentally-caught swordfish could impact swordfish prices received by all permit holders. However, some constituents had indicated to NMFS that the 2-fish Incidental retention limit does not justify the additional effort and costs of fishing for,

	or landing, swordfish, and then bringing it to market. These constituents stated that the 2-fish Incidental retention limit has contributed to an inadequate infrastructure and marketing channel in some areas that is not suitable for handling swordfish. In response, NMFS stated that a 30-fish retention limit should provide more of an incentive to land and market incidentally-caught swordfish, without a significant disruption to swordfish prices. NMFS also responded that increased participation by Incidental swordfish permit holders could help to develop a more consistent supply of swordfish, and thus lead to a more robust market for swordfish products, and help to stabilize prices. NMFS also received public comment regarding the availability of capital to pay for vessel upgrading. There was concern that relaxing the vessel upgrading restrictions would not revitalize the swordfish fishery, because many fishermen could not afford to upgrade their vessels, or were unable to obtain loans for vessel upgrades. However, other constituents identified the current vessel upgrading restrictions as one factor, among several, that is limiting the ability of the U.S. vessels to more fully harvest the U.S. swordfish quota. NMFS recognizes that each business is unique. Some vessel owners may choose to upgrade their vessels, whereas others will not. Owners are not required to upgrade vessels under this final rule. The option to upgrade could improve the flexibility of some vessel owners to make individual business decisions, based upon their unique circumstances. This could result in larger, more modern, U.S. swordfish vessels, and increased swordfish landings. Finally, some commenters indicated that a 35 percent upgrade in vessel size was not sufficient for their business purposes. NMFS responded that a 35 percent increase in vessel size, which would allow an ``average'' 55-foot vessel to be upgraded to a 69 to 74-foot vessel depending upon whether a vessel has already been upgraded by 10 percent, is a meaningful increase in vessel size. There were approximately 50 vessels greater than 70 feet in length that would qualify for the new upgrading provisions. These vessels could be upgraded to more than 90 feet in length and possibly be converted to freezer vessels, upgrades which some commenters suggested are necessary. NMFS believes it is important to keep fleet capacity commensurate with resource abundance to ensure the sustainability of the swordfish fishery. Until additional analysis is completed and other logistical issues are resolved, NMFS believes that it is necessary to keep overall fleet capacity within some limits.
Overlap with other State or Federal Rules	This final rule does not duplicate, overlap, or conflict with any other Federal rules.
Changes in Technology,	The major technological change since 2007 in the swordfish fishery has been the increased use of buoy gear (authorized for use in 2006) to target

Economic Conditions, or Other Factors since Last Evaluation	swordfish and the use of deep drop rigs to target swordfish during daytime. Economic conditions in the commercial swordfish fishery have improved significantly since 2007. In 2007, revenues for Atlantic swordfish totaled $14.5 million based on 3.6 million pounds of harvest and have climbed to a high of $24.5 million in 2012 based on 5.6 million pounds of harvest. At the individual business level, this increase in revenue has likely improved the ability of these small businesses to adjust to regulatory changes. Other actions that have occurred since this rule include a change in the swordfish minimum size (77 FR 45273; July 31, 2012) and the finalization of Amendment 4 (77 FR 59842; October 1, 2012), which created an open access HMS Commercial Caribbean Small Boat permit valid only in the U.S. Caribbean to allow harvest of swordfish, BAYS (bigeye, albacore, yellowfin, and skipjack) tunas, and shark with handgears and greenstick gear. Also, NMFS finalized Amendment 8 (78 FR 52012; August 21, 2013) which created an open access Swordfish General Commercial permit to allow harvest of swordfish with handgears (except buoy gear) and greenstick.
Recommendation to Continue, Rescind, or Amend and Rationale	This rule is continuing and needed to provide additional opportunities for U.S. vessels to more fully utilize the U.S. North Atlantic swordfish quota, in recognition of the improved stock status of the species. This action is necessary to implement recommendations of ICCAT, as required by ATCA.
Name of Action, date, and FR Cite	Atlantic Highly Migratory Species; Atlantic Swordfish Quotas. RIN 0648–AV10 (72 FR 56929; October 5, 2007)
Current Status of Rule (Expired, Rescinded, Superseded, Amended, or Continuing)	Continuing with parts amended.
Description of Management Measures and Complexity	This final rule amended the regulations governing the North and South Atlantic swordfish fisheries to implement two recommendations by the International Commission for the Conservation of Atlantic Tuna (Recommendations 06–02 and 06–03). These recommendations established baseline quotas for North and South Atlantic swordfish, respectively, and set caps on underharvest carryover. Additionally, recommendation 06–02 allows a contracting party (CPC) with a total allowable catch allocation to make a transfer within a fishing year of up to 15 percent of its baseline allocation to other CPCs with total allowable catch allocations, as long as the transfer is conducted in a manner that is consistent with domestic obligations and conservation considerations. This final rule transferred 15 percent of the North Atlantic swordfish baseline quota into the reserve category, which allows it to be transferred to other CPCs with total

	allowable catch allocations. In addition, this final rule modified the North and South Atlantic swordfish quotas for the 2006 fishing year to account for updated landings information from the 2004 and 2005 fishing years. Finally, this final rule included the option of a website as an additional method for complying with the Atlantic HMS Angling or Atlantic HMS Charter/Headboat category's 24-hour reporting requirement. Reporting previously was done by telephone only. NMFS considers that this was a moderately complex rule given that it deals with the implementation of an international agreement that some fishery participants might be unfamiliar with and it updated some recreational reporting requirements.
Economic Impacts of Management Measures and Nature of Public Comments	This rule implemented North and South Atlantic swordfish quotas and underharvest provisions as outlined in ICCAT Recommendations 06-02 and 06-03. North Atlantic underharvest carryover was capped at 50 percent of the 2007 and 2008 baseline quota allocations (1,468.8 mt dw). South Atlantic underharvest carryover was capped at 100 percent of the 2007 and 2008 baseline quota allocations (75.2 mt dw) and South Atlantic underharvest carryover would be capped at 100 mt ww (75.2 mt dw). In addition, this rule allowed for 2,022.56 mt dw of the U.S. 2005 North Atlantic underharvest to be redistributed among other CPCs in 2007 (1,011.28 mt dw) and 2008 (1,011.28 mt dw), consistent with ICCAT recommendation 06-02. By applying caps and baseline quotas in ICCAT Recommendations 06-02 and 06-03 for 2007, prices for fully realized quota harvests were calculated to estimate economic impacts. This rule was estimated to have the potential to result in a loss of $45.3 million for the North Atlantic swordfish fishery in 2007 if harvests were fully realized and $0.14 million for the South Atlantic swordfish fishery in 2007 if harvests were fully realized. However, baseline quotas for the North and South Atlantic had not been fully realized during that time period. The pelagic longline fleet has not caught the entire U.S. swordfish quota, causing significant amounts of swordfish quota to be carried over in past fishing years. For example, the amount of total underharvest in the North Atlantic during years 2004-2006 was 3,528.8 mt dw, 4,806.1 mt dw, and 6,905.9 mt dw, respectively. In the years just before 2007, there had been no landings of swordfish in the South Atlantic. A reduction in the growth of underharvest carryovers, and the June 7, 2007, final rule (72 FR 31688) to help revitalize the swordfish industry, would increase the ability of the vessel owners and permit holders in the pelagic longline fleet to catch their full quota. In conclusion, maintaining the North Atlantic baseline quota, decreasing the South Atlantic baseline quota, and capping underharvest carryovers in both swordfish fisheries was not expected to have adverse impacts on a large number of small entities. The rule also transferred 15 percent (440.6 mt dw) of the 2007 baseline U.S. North Atlantic swordfish allocation to the reserve category. This

	replenished the reserve and made it available for its four stated uses. The rule also replenished a reserve that would otherwise have become depleted in future fishing years through the annual 18.8 mt dw transfer to Canada. This creates four options (previously mentioned) for use of the 15 percent (440.6 mt dw) allocated reserve quota. Placing 15 percent of the 2007 and 2008 baseline quota directly into the reserve would provide for a directed fishery quota that would not be reduced due to an in-season transfer, as well as provide opportunity to cover other U.S. North Atlantic swordfish quota categories should the situation arise. Transferring 15 percent of the U.S. baseline quota to the reserve amounts to 3,601.9 mt dw for the North Atlantic directed swordfish fishery and 504.5 mt dw for the reserve during the 2007 fishing year. If this transfer was not implemented, the North Atlantic directed swordfish fishery would have a larger quota of 4,042.5 mt dw and a smaller reserve of 63.9 mt dw. The implementation of the transfer would therefore result in a potential loss in revenue of $3.7 million to the North Atlantic directed swordfish fishery when compared to the status quo. However, NMFS did not expect fishing effort to increase in the short term to the extent that this loss would be realized. U.S. fishermen have not caught their full swordfish quota since 2000, resulting in large underharvest carryovers which, in turn, made for large adjusted quotas. Therefore, NMFS believed that the caps, and the June 7, 2007, final rule (72 FR 31688) to revitalize the swordfish industry, would help the fishery harvest the swordfish quota without the large carryovers which have occurred in the past. Furthermore, as previously stated, one of the four possible uses of the reserve would be to transfer quota back to the directed swordfish category if needed, which may also prevent this potential economic loss from being realized. NMFS did not receive any comments specific to the IRFA or the economic impacts of the proposed alternatives.
Overlap with other State or Federal Rules	This final rule does not duplicate, overlap, or conflict with any other Federal rules.
Changes in Technology, Economic Conditions, or Other Factors since Last Evaluation	Since this rule was published, scientific research identified roundscale spearfish as a separate species of billfish. This required an amendment to this rule's recreational reporting requirements for the Atlantic HMS Angling and Atlantic HMS Charter/Headboat category. The 2010 Atlantic Billfish Management, White Marline, Roundscale Spearfish rule (75 FR 57698) amended the reporting requirements to include roundscale spearfish. Economic conditions in the commercial swordfish fishery have improved significantly since 2007. In 2007, revenues for Atlantic swordfish totaled $14.5 million based on 3.6 million pounds of harvest and have climbed to a

	high of $24.5 million in 2012 based on 5.6 million pounds of harvest. At the individual business level, this increase in revenue has likely improved the ability of these small businesses to adjust to regulatory changes.
Recommendation to Continue, Rescind, or Amend and Rationale	This rule is continuing as amended and needed to implement recommendations of ICCAT, as required by ATCA, and to maintain consistency with the national standards of the Magnuson-Stevens Act.
Name of Action, date, and FR Cite	International Fisheries; Atlantic Highly Migratory Species; International Trade Permit Program; Bluefin Tuna Catch Documentation Program. RIN 0648–AU88 (73 FR 31380; June 2, 2008)
Current Status of Rule (Expired, Rescinded, Superseded, Amended, or Continuing)	Continuing as amended
Description of Management Measures and Complexity	NMFS modified permitting and reporting requirements for the HMS International Trade Permit (ITP) program to improve program efficacy and enforceability, and implement the ICCAT Bluefin tuna catch documentation (BCD) program. The modified regulations also implemented the new definition of ‘‘import’’ contained in the Magnuson-Stevens Act, and required that shark fin importers, exporters, and reexporters obtain the HMS ITP to assist NMFS in monitoring trade of shark fins. This action was necessary to implement recommendations of ICCAT, as required by ATCA, and to achieve domestic management objectives under the Magnuson-Stevens Act. NMFS considers that this was a moderately complex rule given that it dealt with the implementation of an international agreement and that it deals with import and export reporting requirements.
Economic Impacts of Management Measures and Nature of Public Comments	The rule continues to require the consignee as indicated in Customs and Border Protection (CBP) import documentation to be the responsible party for obtaining the HMS ITP. The annual costs associated with this action are the costs associated with permitting (including the cost of the permit, mailing costs and time for filling out the application – estimated at $26.75 per applicant) and the cost of reporting (including filling out and submitting the report forms – estimated at $102 per dealer for biweekly reports and $94 per dealer for trade tracking documentation, for a total of $196 per dealer). The final action required that shark fin traders obtain an HMS ITP. NMFS anticipated that approximately 100 entities are expected to require the HMS ITP for shark fin trading. Since there were no reporting requirements

	associated with this permit, the only annual costs are for obtaining the permit ($26.75 per dealer). The second category of issues addressed in the final rule is under the heading of ‘‘Reporting.’’ None of the alternatives for these issues would change the number of entities required to obtain an HMS ITP, so there would be no permitting-related costs for any of these issues. The final action also adjusted HMS ITP and Atlantic Tunas Dealer Permit (ATDP) reporting regulations to use a ‘‘received-by’’ date rather than a postmark date for determining dealer compliance with required report submittal schedules. The HMS ITP regulations were clarified to indicate when use of a fax machine would be an acceptable method for submitting a report. This alternative was chosen because it establishes consistency within HMS regulations by using the ‘‘received-by’’ date to ensure NMFS received the report by a date certain, and provides for all report submission alternatives, including faxes. The final rule also retained the 24- hour reporting requirement for enforcement purposes, which was expected to have no economic consequences, since it would not impact reporting frequency. The second reporting-related issue considered alternatives to initially implement ICCAT Recommendation 07–10 and the new BCD program. The final action implemented the program for commercial U.S. Atlantic bluefin tuna fisheries and bluefin tuna imports, exports and re-exports as part of a program that will apply to all ICCAT member nations. The BCD program required the use of new forms with fields similar to the ICCAT bluefin tuna statistical document that was in place before the BCD program was implemented. The change in reporting burden only affected HMS ITP holders that re-export untagged bluefin tuna. When re-exporting an untagged bluefin tuna, the HMS ITP holder is required to send a copy of the re-export certificate to the ICCAT Secretariat and importing nation within five working days via addresses and information provided by NMFS. The costs per transaction could range from zero for electronic transmission of the documents, to approximately $100 for mailing, for an average of $50 per transaction. In 2006, 17 consignments would have been subject to this additional cost. In addition, a time burden of .25 hours per consignment would have resulted in an additional 4.25 aggregate hours for a total annual cost of $64, or $3.75 per transaction. The last issue under this category addressed reporting of Atlantic bluefin tuna exports. The final action provided a positive economic impact, reducing the current reporting burden for individuals who hold both an Atlantic Tunas Directed Permit (ATDP) and HMS ITP by clarifying that bluefin tuna exports would only need to be reported on one biweekly report. This provision ensured the reporting burden for export of domestically landed Atlantic bluefin tuna would not be duplicative with

	landing reporting requirements. This action would positively affect the 64 individuals who concurrently held an ATDP and HMS ITP and could save an estimated $51 per dealer per year. In addition, the final action could reduce the reporting burden for HMS ITP holders who purchase bluefin tuna from an ATDP holder, with an estimated savings similar to those for individuals holding both permits. The last issue considered in this final rule that could have economic impacts addressed the verification of foreign validating officials for imports. NMFS stated it would pursue further international coordination on this issue, and there would be no economic related consequences. This alternative was selected to mitigate reporting burden for U.S. businesses and further coordinate international action for this issue. NMFS received a comment that stated that U.S. bluefin tuna re-exporters are assigned an unfair reporting burden for re-export of untagged bluefin tuna relative to the bluefin tuna trade industry in other nations. The commenter stated that the United States is one of the few countries that tags every exported fish, which results in a reduced burden for re-exporters in other nations, and that the U.S. industry carries more reporting burden than industry members in other countries. NMFS notes that the final rule requires that re-exporters of untagged bluefin tuna provide copies of completed re-export certificates and associated documentation to the ICCAT Secretariat and competent authorities of importing nations at provided addresses. NMFS included this requirement since ICCAT Recommendation 07–10 specifically requires all nations, including the United States, to conduct such reporting. However, the United States' sophisticated catch monitoring program, which includes tagging exempts U.S. industry members from certain other parts of the ICCAT Recommendation 07–10 BCD program. NMFS will continue to work with ICCAT to balance the burden of international fisheries management fairly among participating nations. Overall, the reporting requirements of the ICCAT BCD program that must be implemented by the United States have been mitigated and reduced because of the U.S. programs currently in place.
Overlap with other State or Federal Rules	This final rule does not duplicate, overlap, or conflict with any other Federal rules.
Changes in Technology, Economic Conditions, or Other Factors since Last Evaluation	Technological improvements have been made to the BCD program. An electronic Bluefin Catch Documentation (eBCD) scheme in development is being tested.
Recommendation to Continue,	This rule is continuing as amended for minor regulatory clarification and needed to implement recommendations of ICCAT, as required by ATCA,

Rescind, or Amend and Rationale	and to maintain consistency with the national standards of the Magnuson-Stevens Act. NMFS will likely revisit some of these rule provisions when a regulatory package is developed soon to implement the ICCAT eBCD system.
Name of Action, date, and FR Cite	Atlantic Highly Migratory Species; Atlantic Shark Management Measures. 0648–AU89 (73 FR 35778; June 24, 2008)
Current Status of Rule (Expired, Rescinded, Superseded, Amended, or Continuing)	Amended
Description of Management Measures and Complexity	This final rule implemented the management measures described in Final Amendment 2 to the Atlantic HMS FMP. These management measures were designed to rebuild overfished species and prevent overfishing of Atlantic sharks. These measures include, but are not limited to, reductions in the commercial quotas, adjustments to commercial retention limits, establishment of a shark research fishery, a requirement for commercial vessels to maintain all fins on the shark carcasses through offloading, the establishment of two regional quotas for non-sandbar large coastal sharks, the establishment of one annual season for commercial shark fishing instead of trimesters, changes in reporting requirements for dealers (including swordfish and tuna dealers), the establishment of additional time/area closures for bottom longline fisheries, and changes to the authorized species for recreational fisheries. This rule also established the 2008 commercial quota for all Atlantic shark species groups. These changes affected all commercial and recreational shark fishermen and shark dealers on the Atlantic Coast. NMFS considers that this was a complex rule given that it was a major amendment to the fishery management plan with many provisions.
Economic Impacts of Management Measures and Nature of Public Comments	Amendment 2 to the 2006 Consolidated HMS FMP established a program where vessels with directed or incidental shark permits could participate in a small research fishery for sandbar sharks that would harvest the entire 116.6 mt dw sandbar quota. There would be 100 percent observer coverage on each research vessel, and only vessels participating in this program could land sandbar sharks. Vessels not participating in the research program could land non-sandbar LCS, SCS, and pelagic sharks. It was estimated that vessels in the shark research fishery could make $437,963 in gross revenues of sandbar and non-sandbar LCS landings under the adjusted quota. Since 5 to 10 vessels were anticipated to participate in the research fishery, NMFS estimated that an individual vessel could make between $87,593 (i.e., 5 boats) to $43,796 (i.e., 10 boats) in gross revenues on sandbar shark and non-sandbar LCS landings. However, the vessels

	operating outside of the research fishery would have a lower adjusted regional non-sandbar LCS base quota of 187.8 mt dw in the Atlantic region and 390.5 mt dw in the Gulf of Mexico region. In 2006 ex-vessel prices, this is equivalent to $516,285 in the Atlantic region and $1,273,269 in gross revenues in the Gulf of Mexico region. Divided by the remaining vessels it was estimated that the average gross revenues from shark per vessel would be just over $2,000 per trip. NMFS received a comment that NMFS should consider an alternative suite that incorporates a ''phase out'' of the commercial shark industry. NMFS did consider such an alternative in the Draft EIS that would have ended Atlantic commercial shark fishing, Alternative Suite 5. Under this alternative, shark landings would have been limited to research and the collection for public display via the HMS Exempted Fishing Program. Recreational fisheries would have been catch and release only. However, after careful consideration of the other alternatives, this alternative suite was not preferred due to the economic costs associated with a complete closure as discussed in Chapter 6 of Amendment 2 to the Consolidated HMS FMP. NMFS received several comments regarding an industry buyout/buyback. NMFS recognizes that some participants of the Atlantic shark fishery expressed interest in reducing fishing capacity for sharks via some form of buyout program. Buyouts can occur via one of three mechanisms, including: through an industry fee, via appropriations from the United States Congress, and/or with funds provided from any State or other public sources or private or non-profit organization. A buyout plan is not proposed in this rulemaking, despite requests for consideration from the HMS Advisory Panel and other affected constituents, because NMFS is unable to independently implement a buyout as a management option. Buyouts must be initiated via one of the aforementioned mechanisms. The shark fishery did develop an industry ''business plan'' that examined options for a buyout, which is further described in Chapter 1 of the Draft Amendment 2 to the Consolidated HMS FMP. NMFS received several comments concerning the potential for severe economic impacts associated with all of the alternatives considered (other than status quo). Comments indicated a concern that many fishermen may not be able to survive economically until the next stock assessment. NMFS estimated that the alternatives considered, including the no action alternative, would result in economic consequences to the shark fishery. The dealers already handle small quantities of shark products, and therefore, changes in the shark fishery are unlikely to cause them to change their business practices. Reduced domestic harvest of sandbar sharks could potentially increase the value of shark product in the future due to reduced supplies. Furthermore, having the season open for a longer period of time each year, subject to reduced retention limits, may enhance the domestic

	shark meat market and increase prices. Several comments suggested NMFS should implement a retraining program for fishermen and families that are displaced by this action. Others suggested that fishermen reconfigure their businesses towards providing tourism services. NMFS has worked with a number of other agencies/ departments to explore programs that are available to fishermen and other businesses affected by fishery management measures. Some of these include retraining programs and financial assistance and would mitigate some of the economic impacts of this rule. These programs are further discussed in response to comments provided above. Commenters also suggested that NMFS consider giving shark fishermen swordfish handgear permits in order to help offset negative economic impacts, while also increasing swordfish landings. NMFS did not propose changes to the permit system pursuant to the rulemaking; however, NMFS will take this suggestion under consideration for future actions. NMFS notes that the swordfish handgear permit is a limited access permit. Therefore, issuing new swordfish handgear permits may result in negative economic impacts to current holders of swordfish handgear permits. In addition, NMFS has taken several actions in recent years to revitalize the swordfish fishery and may consider additional measures in the future as appropriate. NMFS received a comment questioning whether shark permits will still have any value after the proposed management changes take place. It is difficult to predict the value of shark directed and incidental permits before management measures associated with this Amendment are implemented. It is likely that the value of shark permits may decrease as a result of quota reductions and reduced retention limits. However, there will still be some demand for shark permits by new entrants into the commercial swordfish and tuna fisheries who will need all three HMS permits to fish.
Overlap with other State or Federal Rules	This final rule does not duplicate, overlap, or conflict with any other Federal rules.
Changes in Technology, Economic Conditions, or Other Factors since Last Evaluation	Since 2006, there has been a steady decline in commercial shark fishery revenues from $6.6 million in 2006 to $2.1 million in 2013. This decline in revenues is mainly attributable to state and federal management measures designed to address overfishing of several shark species. This decline in overall shark revenues has had negative economic impacts on small businesses that rely on commercial shark fishing. Since 2006, there have also been a number of shark stock assessments (including but not limited to assessments for sandbar, dusky, blacknose, and blacktip sharks), resulting in the need for additional regulations.

Recommendation to Continue, Rescind, or Amend and Rationale	Some portions of this rule were amended by NMFS in Amendment 5a (2013). In addition, current work on developing Amendment 6 will also likely amend provisions of this rule. Potential adjustments include changes to the quotas based on recent assessments and changes to the trip limits. These changes would not change the overall structure established in this 2008 rulemaking.
Name of Action, date, and FR Cite	Atlantic Highly Migratory Species; Renewal of Atlantic Tunas Longline Limited Access Permits; Atlantic Shark Dealer Workshop Attendance Requirements. 0648–AW46 (73 FR 38144; July 3, 2008)
Current Status of Rule (Expired, Rescinded, Superseded, Amended, or Continuing)	Continuing
Description of Management Measures and Complexity	This final rule amended the regulations governing the renewal of Atlantic tunas longline limited access permits (LAPs), and amended the workshop attendance requirements for businesses issued Atlantic shark dealer permits. Specifically, the regulatory changes allowed for the renewal of Atlantic tunas longline LAPs that have been expired for more than one year by the most recent permit holder of record, provided that the applicant has been issued a swordfish LAP (other than a handgear LAP) and a shark LAP, and all other requirements for permit renewal are met. Also, this rule amended the Atlantic Shark Identification Workshop requirements by: specifying that a workshop certificate be submitted upon permit renewal, and later possessed and available for inspection, for each place of business listed on the dealer permit which first receives Atlantic sharks by way of purchase, barter, or trade (rather than for each location listed on their dealer permit); and required that extensions of a dealer's business, such as trucks or other conveyances, must possess a copy of a valid dealer or proxy certificate issued to a place of business listed on the dealer permit. Since this regulation only made changes to the renewal of permits, workshop attendance requirements NMFS determined that it was a relatively low complexity rule.
Economic Impacts of Management Measures and Nature of Public Comments	Removing the one-year renewal timeframe for Atlantic tunas longline LAPs was projected to potentially increase net and gross revenues for approximately 40 vessel owners who are otherwise qualified to fish for swordfish and tunas with PLL gear, except that they are currently ineligible to renew their Atlantic tunas longline LAP. Overall fleet-wide gross economic benefits could potentially increase as much as $7,842,280, relative to the baseline. Also, an overall fleet-wide increase in net revenues (profits) of approximately $200,000 to $721,839 could occur, distributed among the 40 vessels potentially impacted by this action. Under this action,

	each individual vessel owner could see an increase in annual net revenues ranging from $0 to potentially over $100,000, depending upon the profitability of their business. Another important benefit is that it could help to maintain the domestic swordfish and tuna PLL fishery at historical levels by allowing 35 – 40 vessels to participate in the fishery that, since September 2007, have not been permitted to do so. All of the potentially affected vessels/permit holders originally qualified for the longline fishery in 1999, or received the necessary permits through transfer. Thus, relative to August 2007 and years prior, there would be no change in historical fishing practices, fishing effort, or economic impact. However, relative to September 2007 and beyond, potential economic benefits to the affected permit holders would result. The final rule could also help the United States retain its historic swordfish quota allocation at ICCAT and sustain employment opportunities in the domestic PLL fleet. Maintaining a viable domestic PLL fishery is important because it could help to demonstrate that a well-managed, environmentally-sound fishery can also be profitable. This could eventually provide an incentive for other nations to adopt similar management measures that are currently required of the U.S. PLL fleet such as circle hooks, careful release gears, and other measures described in the response to the comment above. A related potential impact associated with this action included changes to the value of an Atlantic tunas longline permit. The final rule was expected to initially increase the supply relative to the period since September 2007, and thereby reduce the value. These impacts would be either positive or negative for small business entities, depending upon whether the Atlantic tunas longline LAP was being bought or sold. The final action for Atlantic Shark Identification Workshop attendance requirements (preferred alternative 2.2.2 in the FRFA) specified that, upon permit renewal, a dealer must submit an Atlantic Shark Identification Workshop certificate (dealer or proxy) for each place of business listed on the dealer permit which first receives Atlantic sharks by way of purchase, barter, or trade, rather than from each location listed on their dealer permit. The requirement to possess, and make available for inspection, an Atlantic Shark Identification Workshop certificate is similarly only required at locations listed on the dealer permit where sharks are first received. This eliminates the need for a dealer to send a proxy to a workshop to obtain a certificate for a business location that does not first receive Atlantic shark products. As mentioned above, there are currently 41 shark dealers with multiple locations listed on their permit which could be impacted by this action. Of these, 8 Atlantic shark dealers have not currently been issued Atlantic

	Shark Identification Workshop certificates for all of the locations listed on their permit. NMFS estimates that the total costs (travel costs and opportunity costs) associated with the selected alternative for Atlantic Shark Identification Workshop attendance requirements will be lower than those associated with the no action alternative, but only for Atlantic shark dealers that: (1) opt to send a proxy (or proxies) to the workshop; (2) have multiple locations listed on their permit; and, (3) only first receive shark products at some of the locations listed on their Atlantic shark dealer permit. Costs will remain unchanged for shark dealers that do not meet these three criteria. The final rule for Atlantic Shark Identification Workshop attendance requirements (preferred alternative 2.2.2 in the FRFA) specifies that, upon permit renewal, a dealer must submit an Atlantic Shark Identification Workshop certificate (dealer or proxy) for each place of business listed on the dealer permit which first receives Atlantic sharks by way of purchase, barter, or trade, rather than from each location listed on their dealer permit. The requirement to possess, and make available for inspection, an Atlantic Shark Identification Workshop certificate is similarly only required at locations listed on the dealer permit where sharks are first received. This eliminates the need for a dealer to send a proxy to a workshop to obtain a certificate for a business location that does not first receive Atlantic shark products. NMFS received comments that the final action could provide some economic benefits to fishery participants and reduce regulatory discards. NMFS concurs with this assessment that the final action could provide an economic benefit to some former permit holders, and reduce or eliminate swordfish regulatory discards by allowing squid trawlers to retain incidentally-caught swordfish. Another commenter stated that the preferred alternative would allow people who did not follow the regulations regarding permit renewal to obtain a new Atlantic tunas longline LAP, whereas some fishermen had to pay for the permit. In response, NMFS stated that the intent of the final rule is to help ensure that the number of available Atlantic tunas longline LAPs is sufficient to match the number of available swordfish and shark LAPs. Furthermore, all of the individuals affected by this rule either originally qualified for an Atlantic tunas longline LAP, or obtained it through transfer. NMFS will not be issuing new permits to everyone who submits an application. The Atlantic tunas longline permit remains a limited access permit. Unless a person is the most recent Atlantic tunas longline permit holder of record, the permit can only be obtained through transfer. Finally, NMFS received a comment stating that the preferred alternative provides an opportunity for individuals to sell their newly reissued Atlantic tunas longline LAP for their own economic benefit, possibly to south Florida vessel owners that want to fish with buoy gear. In response, NMFS believes it would be beneficial for achieving the domestic north Atlantic swordfish quota if some people who

	want to fish for swordfish are able to do so legally. Some of the transferred permits could be used to participate in the buoy gear fishery in south Florida. NMFS will continue to monitor the buoy gear fishery to determine if additional regulations are needed.
Overlap with other State or Federal Rules	This final rule does not duplicate, overlap, or conflict with any other Federal rules.
Changes in Technology, Economic Conditions, or Other Factors since Last Evaluation	There have been no significant changes impacting pelagic longline permit holders and dealer workshop attendance. In 2007, the number of Atlantic Tuna Longline Limited Access permit holders was 218. This number increased to 241 in 2008 and to 259 in 2009. That number has remained around 250 since then.
Recommendation to Continue, Rescind, or Amend and Rationale	This rule is continuing as currently amended to meet the objectives of the Magnuson-Stevens Act and the 2006 Consolidated HMS FMP. The changes to permit renewal requirements were successful in increasing the number of valid Atlantic tunas longline LAPs. Atlantic Shark Identification Workshops are also ongoing.
Name of Action, date, and FR Cite	Atlantic Highly Migratory Species; Atlantic Tuna Fisheries; Pelagic and Bottom Longline Fisheries; Gear Authorization and Turtle Control Devices. 0648–AV92 (73 FR 54721; September 23, 2008)
Current Status of Rule (Expired, Rescinded, Superseded, Amended, or Continuing)	Continuing
Description of Management Measures and Complexity	NMFS authorized green-stick gear for the harvest of Atlantic tunas, including bluefin tuna, and required a sea turtle control device in Atlantic HMS pelagic longline (PLL) and bottom longline fisheries. At that time, NMFS was not authorizing harpoon gear for the harvest of Atlantic tunas in the HMS Charter/Headboat category as originally proposed. The purpose of this final rule was to ensure fishermen harvest Atlantic tunas within quotas, size limits, or other established limitations and to distinguish greenstick fishing gear from current definitions of other authorized gear types. This final rule also addressed use of sea turtle control devices in the PLL and bottom longline fisheries to achieve and maintain low post-release mortality of sea turtles thus maintaining consistency with the 2004 Biological Opinion for the Atlantic PLL fishery and to increase safety at sea for fishermen when handling sea turtles caught or entangled in longline fishing gear. NMFS also revised its list of equipment models that NMFS had approved as meeting the minimum design specifications for the careful

	release of sea turtles caught in hook and line fisheries. NMFS considers this rule to be low to moderately complex since it added a new authorized gear type, a new turtle control device, and revised a list of previously approved equipment for careful release of sea turtles.
Economic Impacts of Management Measures and Nature of Public Comments	Green-stick gear was defined and authorized for use in the commercial Atlantic tuna fishery for BAYS and bluefin tuna (BFT) by Atlantic Tunas General category vessels. Vessels fishing under the Atlantic Tunas General category will continue to be subject to all current HMS regulations for that category (such as bag and size limits). NMFS did not anticipate greatly increased landings from Atlantic Tunas General category vessels as a result of this rule because green-stick gear has been used in HMS fisheries since at least the mid-1990s. While NMFS did not anticipate greatly increased landings, this rule could result in a minor increase of overall effort deployed by this category of permit holders. This could occur if additional fishermen become aware of green-stick gear efficiency in catching Atlantic tunas and of the high quality of fish product that can be delivered to the dock as a result. Higher quality fish product often commands high ex-vessel prices, and thus could potentially improve the profitability of trips. The economic impacts were expected to be positive at the individual business level for those businesses choosing to use this gear type. Authorization of green-stick gear for harvest of Atlantic tunas would allow Atlantic Tunas General category permit holders additional opportunities for harvest. Tuna and other species harvested commercially with green-stick gear are usually high in quality and command higher prices due to the speed with which the fish are brought to the vessel, stored on ice, transported to the dock, and sold. Use of this gear may result in an unknown number of additional trips. The economic benefits may be minimal, however, as green-stick gear has been used in U.S. Atlantic tuna fisheries for several years and potential increases above existing levels of use as a result of this rule are expected to be minimal. Green-stick gear ranged in cost from $1,300-$3,300 for the fiberglass pole. Completely outfitting a vessel with hydraulic spool and other tackle to use the gear would cost between $4,000 and $6,000 depending on the size of the rig. Therefore, the total cost of outfitting a vessel to fish with green-stick gear would cost between $5,300-9,300. Anecdotal information indicates that some fishermen may run mainlines from outriggers, a flying bridge, or a tuna tower, which would not be as costly. Outfitting costs are discretionary for fishermen as the gear is not required to participate in the fishery. This gear will be authorized for use from properly permitted vessels only. The cost of a Federal vessel permit in 2008 is $28.00 per year. This rule

	also authorized green-stick gear for recreational harvest of Atlantic tunas when an HMS CHB permitted vessel is on a for-hire trip. Under this rule, HMS CHB vessels may sell Atlantic tunas whether the vessel is for-hire or not-for-hire. Additionally, NMFS received public comment that HMS CHB vessels desired to have the option of using green-stick gear on for-hire trips. Vessels fishing under the HMS CHB category will continue to be subject to all current HMS regulations for that category. This rule was expected to have positive economic impacts similar to those described above, but with the added economic benefits associated with authorizing the use of green-stick gear for recreational harvest of Atlantic tunas even when an HMS CHB permitted vessel is on a for-hire trip. Under this rule, green-stick gear was also authorized for use in the directed commercial Atlantic BAYS tuna fishery and allow for the incidental retention of BFT by Atlantic Tunas Longline category vessels. Green-stick gear can currently be used with more than two hooks by Atlantic Tunas Longline permitted vessels under current target catch and gear (i.e., circle hook) requirements. This rule distinguished green-stick gear from longline gear thus allowing green-stick gear to be fished in PLL and BLL closed areas if existing regulations for removal of PLL and BLL gear are met. These regulations state that a vessel is considered to have PLL gear onboard when it has onboard a power-operated longline hauler, a mainline, floats capable of supporting the mainline, and leaders (gangions) with hooks. Likewise, a vessel is considered to have BLL gear onboard when it has onboard a power-operated longline hauler, a mainline, weights and/or anchors capable of maintaining contact between the mainline and the ocean bottom, and leader (gangions) with hooks. For closed areas respective to both PLL and BLL gear, removal of any one of these elements constitutes removal of the PLL or BLL gear. Atlantic Tunas Longline permitted vessels will continue to be subject to current HMS PLL or BLL regulations, whichever is applicable, including the closed areas and circle hook requirements except that up to 20 J-hooks will be allowed onboard if green-stick gear is also onboard for use only with the green-stick gear. This provision to allow up to 20 J-hooks is intended to facilitate the high speed trolling methods used when fishing with green-stick gear. J-hooks possessed or used when green-stick gear is onboard may only be used with green-stick gear and may be no smaller than 1.5 inch (38.1 mm) when measured in a straight line over the longest distance from the eye to any other part of the hook. This rule was expected to have positive economic impacts particularly for fishermen holding Atlantic Tunas Longline permits who make use of greenstick gear. Public and HMS Advisory Panel member support was expressed for this provision. Authorization of green-stick for harvest of

	Atlantic tunas allowed Atlantic Tunas Longline category permit holders additional opportunities for harvest. Economic benefits may have been realized through increased need for fish processing and the sale of additional fishing gear and supplies. Economic impacts may be positive in that further reduction in sea turtle mortalities achieved by enabling fishing gear removal may aid in continuation of the PLL fishery. Reducing the mortality of sea turtles in the PLL fishery reduces the likelihood that the performance targets for incidental take and mortality of sea turtles in the PLL fishery that were established in the 2004 BiOp are exceeded. Exceeding the performance targets in the 2004 BiOp could result in closure of the PLL fishery in the Gulf of Mexico and/or reinitiation of Section 7 consultation under the Endangered Species Act. It was unknown how many vessels followed the recommendation to possess and use sea turtle control devices. Production models of the turtle tether cost from $200-$250 and may be constructed according to the design specifications for $40-$70. Production models of the T&G ninja sticks may be purchased for $175 and may be constructed according to the design specifications for approximately $25-$85. Based on the number of Atlantic Tunas Longline, Shark Directed, or Shark Incidental permitted vessels as of November 2007, it was estimated that the cost of outfitting the longline fleet with one turtle control device would range from $18,575, if all permit holders construct the least expensive device, to $185,750, if all permit holders purchase the most expensive model produced. NMFS received several comments on the proposed rule and draft EA during the public comment period. A summary of these comments and the Agency's responses are included above. NMFS did not receive any comments specific to the Initial Regulatory Flexibility Analysis (IRFA). During the public comment period, NMFS received an economic comment that NMFS should not require a sea turtle control device in PLL and BLL fisheries because the shark fishing fleet cannot afford the device to meet the requirement. NMFS stated that it understands that there may be some negative economic impact from this requirement and has attempted to minimize these impacts by allowing the devices to be constructed with low cost materials. Construction costs for the sea turtle control devices range from $25to $85 and may be constructed with materials that fishermen may already have on hand, thus reducing the construction cost. NMFS believes that the economic impacts to fishermen are not likely to be large with this final action. No changes were made to this final action as a result of this comment.
Overlap with other State or Federal Rules	This final rule does not duplicate, overlap, or conflict with any other Federal rules.

Changes in Technology, Economic Conditions, or Other Factors since Last Evaluation	There have been no significant changes to green-stick gear technology or required sea turtle control devices since this rule was published. There does not appear to have been a significant increase in landings of fish and therefore economic conditions for individual businesses have not likely changed.
Recommendation to Continue, Rescind, or Amend and Rationale	This rule is continuing and needed to address the use of green-stick gear in the Atlantic tunas fishery and to address use of sea turtle control devices in the PLL and bottom longline fisheries to achieve and maintain low post-release mortality of sea turtles.

Chapter 5 References

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6. COMMUNITY PROFILES

This chapter updates the community information on the HMS fishing communities identified and described in the 2006 Consolidated HMS FMP and its amendments. Background information on the legal requirements and summary information on the community studies conducted to choose the communities profiled in this document is not repeated here and can be found in previous HMS SAFE Reports, and was most recently updated in the 2011 HMS SAFE Report. Additionally, the 2011 and 2012 HMS SAFE Reports contain modified demographic profile tables from previous documents to include the same baseline information for each community profiled, and use 1990, 2000, and 2010 Bureau of the Census data for comparative purposes. A profile for the U.S. Virgin Islands was not created because of the limited availability of 1990, 2000, and 2010 Census data for the region. The descriptive community profiles in the 2011 HMS SAFE Report include information provided by Wilson, et al. (1998) and Kirkley (2005), Impact Assessment, Inc. (2004), and information obtained from MRAG Americas, Inc. (2008), along with 2010 Bureau of the Census data.

Of the communities profiled in previous SAFE Reports, ten were originally selected due to the proportion of HMS landings in the town, the relationship between the geographic communities and the fishing fleets, the existence of other community studies, and input from the HMS and Billfish Advisory Panels (which preceded the combined HMS Advisory Panel that currently exists). The remaining 14 communities, although not selected initially, have been identified as communities that could be impacted by changes to the current HMS regulations because of the number of HMS permits associated with these communities, and their community profile information has been incorporated into the document. The list of communities profiled is not intended to be an exhaustive record of every HMS-related community in the United States; rather the objective is to give a broad perspective of representative areas.

6.1 Community Impacts from Hurricanes

This section is an overview of the impacts on HMS communities caused by hurricanes during 2013. Please refer to prior SAFE reports for hurricane impact information prior to 2013.

The 2013 Atlantic hurricane season was one of the quietest reported in the past two decades (Blake 2014). While the 2013 hurricane season had an above average number of named storms (14), only two became hurricanes. Both hurricanes (Humberto and Ingrid) were Category 1, based on the Saffir-Simpson Hurricane Wind Scale. Tropical Storm Andrea was the only storm to make landfall in the United States (Bevin 2013), with the center of Andrea hitting land on June 6, 2013 about 10 miles north of Steinhatchee, Florida. After landfall, the storm moved northeast across Florida and continued to accelerate across southeast Georgia. The storm caused 11 tornadoes in the United States, resulted in storm surge of 1 to 3 ft and average rainfall of 3-5" from Florida to New England, and caused one direct death in Horry County, South Carolina. While the storm resulted in minor property damage, due to storm surge, freshwater flooding and tornadoes, the insured amounts were less than the $25 million threshold used to declare a catastrophe.

6.2 Community Impacts from 2010 Deepwater Horizon/BP Oil Spill

On April 20, 2010, an explosion and subsequent fire damaged the Deepwater Horizon MC252 oil rig, which capsized and sank approximately 50 miles southeast of Venice, Louisiana. Oil flowed for 86 days into the Gulf of Mexico from a damaged well head on the sea floor. In response to the Deepwater Horizon MC252 oil spill, NMFS issued a series of emergency rules (75 FR 24822, May 6, 2010; 75 FR 26679, May 12, 2010; 75 FR 27217, May 14, 2010) closing a portion of the Gulf of Mexico exclusive economic zone (EEZ) to all fishing and analyzed the environmental impacts of these closures in an Environmental Assessment. Between May and November 2010, NMFS closed additional portions of the Gulf of Mexico to fishing. The maximum closure was implemented on June 2, 2010, when fishing was prohibited in approximately 37 percent of the Gulf of Mexico EEZ. Significant portions of state territorial waters in Alabama (40%), Florida (2%), Louisiana (55%), and Mississippi (95%) were closed to fishing (Upton, 2011). After November 15, 2010, approximately 0.4 percent (1,041 square miles) of the federal fishing area was kept closed immediately around the Deepwater Horizon wellhead through April 19, 2011, when the final oil spill closure area was lifted (NOAA 2011c).

Socioeconomic impacts from the oil spill on HMS communities include losses in HMS revenue and negative psychological impacts. One study (Sumaila et al, 2012) estimated loss in commercial pelagic fish revenue, which includes HMS species, at $35-58 million over the next seven years. The study also estimated that Gulf of Mexico recreational fisheries could lose between 11,000-18,000 jobs, and have an overall economic loss between $2.5-4.2 billion (Sumaila et al, 2012). Residents in Florida and Alabama in communities where oil reached their shores that experienced income loss due to the oil spill exhibited significantly higher levels of depression, anxiety, anger, and fatigue than residents that did not experience oil spill related income loss (Grattan et al, 2011). These residents who suffered income losses were also more likely to cope with the loss by giving up (behavioral disengagement) and other avoidance strategies (Grattan et al, 2011). NMFS is continuing to evaluate the impacts of the Deepwater Horizon Spill on HMS stocks and fishermen. For more information see: http://www.noaa.gov/deepwaterhorizon/index.html and http://sero.nmfs.noaa.gov/deepwater_horizon/index.html.

6.3 Social Indicators of Fishing Community Vulnerability and Resilience

The NMFS Office of Science and Technology presents community profiles by region (e.g., Northeast, mid-Atlantic, Southeast, Gulf of Mexico) at on the following website: http://www.st.nmfs.noaa.gov/humandimensions/community-profiles/index.

The NMFS Office of Science and Technology presents information on community vulnerability and resilience on its webpage: http://www.st.nmfs.noaa.gov/humandimensions/social-indicators/index.

This section presents social indicators of vulnerability and resilience developed by Jepsen and Colburn (2013) for 25 communities selected for having a greater than average number of HMS permits associated with them. Jepsen and Colburn (2013) developed a series of indices using social indicator variables that could assess a coastal community's vulnerability or resilience to potential economic disruptions such as those resulting from drastic changes in fisheries quotas and seasons, or natural and anthropogenic disasters. Indices and index scores

were developed using factor analyses of data from the United States Census, permit sales, landings reports, and recreational fishing effort estimates from the MRIP survey (Jepsen and Colburn, 2013). This section uses radar graphs to present four indices related to fishing dependence vulnerability (recreational and commercial fishing reliance and engagement indices, Figure 6.1 and Figure 6.2), two indices related to social vulnerability (personal disruption index and poverty index, Figure 6.3), and two related to gentrification vulnerability (retiree migration index and natural amenities index, (Figure 6.4). Each index is scored so that higher values indicate increased community vulnerability to disruption with mean index scores standardized to zero. Communities with index scores greater than one standard deviation above the mean are considered to be the most vulnerable, and this threshold is illustrated on each figure with a black circular line (Jepsen and Colburn, 2013).

Fishing Reliance and Engagement Indices

Jepsen and Colburn (2013) developed two indices each to measure community reliance and engagement with recreational and commercial fishing, respectively. The recreational fishing engagement index was measured using MRIP estimates of the number of charter, private boat, and shore recreational fishing trips originating in each community. The recreational fishing reliance index was generated using the same fishing trip estimates adjusted to a per capita basis. In Figure 6.1, recreational fishing reliance and engagement index scores are presented for 25 HMS communities. The communities of Orange Beach, AL; Apalachicola, FL; Destin, FL; Grand Isle, LA; Venice, LA; Ocean City, MD; Atlantic Beach, NC; Barnegat Light, NJ; Cape May, NJ; and Montauk, NY all exceed the one standard deviation threshold for both recreational reliance and engagement indicating that each exhibits exceptionally high numbers of annual fishing trips both in absolute numbers and adjusted per capita. This suggests that each of these communities are highly vulnerable to economic disruption from potential declines in fishing participation be they due to seasonal fishing closures or disasters such as Super Storm Sandy or the Deepwater Horizon oil spill. Other communities such as Panama City, FL; Islamorada, FL; Pompano Beach, FL; Dulac, LA; Gloucester, MA; New Bedford, MA; Beaufort, NC; Morehead City, NC; Brielle, NJ; and Wakefield-Peacedale, RI all had scores in excess of the one standard deviation threshold on the recreational fishing engagement index, but not on the recreational fishing reliance index. This indicates these communities exhibit large absolute numbers of fishing trips annually, but only moderate numbers of trips on a per capita basis. This would indicate these communities are also economically vulnerable to declines in recreational fishing participation, but not as severely as other HMS communities.

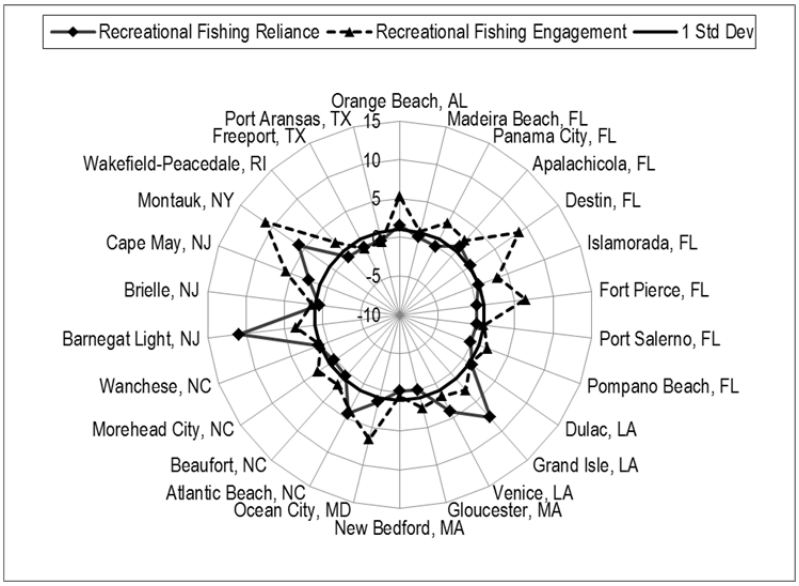

Figure 6.1 Recreational Fishing Engagement and Reliance Indices by HMS Community

Jepsen and Colburn (2013) also calculated indices measuring community reliance on and engagement with commercial fishing. Commercial fishing engagement was assessed based on pounds of landings, value of landings, number of commercial fishing permits sold, and number of dealers with landings. Commercial fishing reliance was assessed based on value of landings per capita; number of commercial permits per capita; dealers with landings per capita; and percentage of people employed in agriculture, forestry, and fishing. Figure 6.2 shows that Dulac, LA; Grand Isle, LA; Venice, LA; Gloucester, MA; New Bedford, MA; Beaufort, NC; Wanchese, NC; Barnegat, NJ; Cape May, NJ; and Montauk, NY all score above the one standard deviation threshold for both indices indicating they are all dependent upon commercial fishing. Several communities including Gloucester, MA; New Bedford, MA; Barnegat Light, NJ; and Cape May, NJ exhibited particularly high index scores on one of the two indices suggesting they are particularly dependent on commercial fishing.

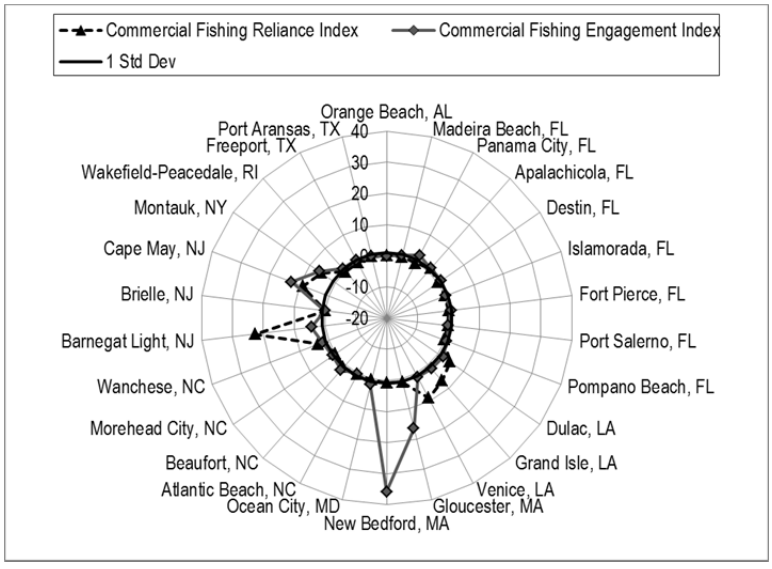

Figure 6.2 Commercial Fishing Engagement and Reliance Indices by HMS Community

Social Vulnerability Indices

Two indices of social vulnerability developed by Jepsen and Colburn (2013) are presented in this section. The personal disruption index includes the following community variables representing disruptive forces in family lives: percent unemployment, crime index, percent with no diploma, percent in poverty, and percent separated females. The poverty index includes several variables measuring poverty levels within different community social groups including: percent receiving government assistance, percent of families below the poverty line, percent over 65 in poverty, and percent under 18 in poverty. Figure 6.3 shows that the communities of Apalachicola, FL; Fort Pierce, FL; and New Bedford, MA each score above the one standard deviation threshold on both of the social vulnerability indices, while the communities of Dulac, LA; Venice, LA; and Freeport, TX each score above the threshold on one index. These scores suggest these communities would likely experience greater difficulty recovering from economic hardships caused by job losses in the recreational and commercial fishing sectors.

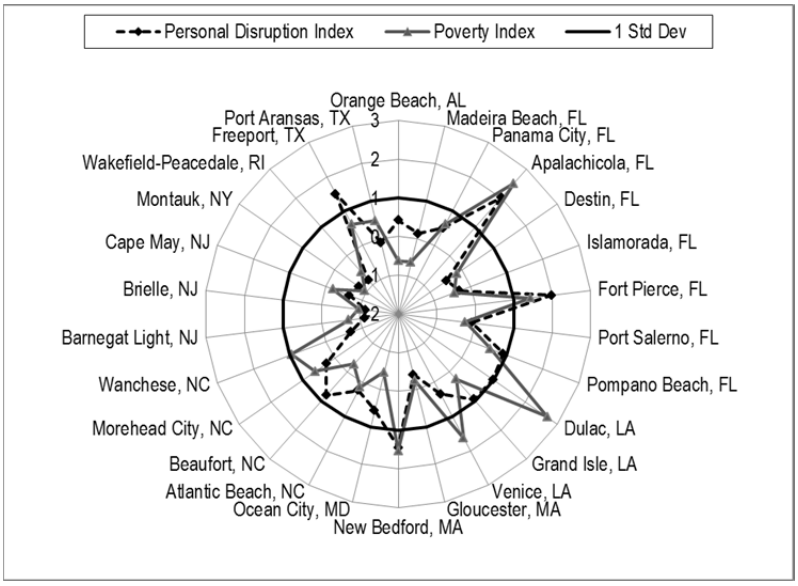

Figure 6.3 Social Vulnerability Indices by HMS Community

Gentrification Indices of Vulnerability

Finally, this section includes two indices measuring community vulnerability to gentrification developed by Jepsen and Colburn (2013). Gentrification is a process whereby community structure changes as a result of an influx in higher income households, and the businesses that cater to them, to the point community social networks and power structures change, and traditional community families are threatened to be displaced (Jepsen and Colburn, 2013). The retiree migration index includes variables that measure the influx of retirees to a community and includes: households with one or more over 65, percent population receiving social security, percent receiving retirement income, and percent in labor force. The natural amenities index includes variables that represent community characteristics that can determine the areas attractiveness to emigrants which include: rental vacancy rate, percent homes vacant, boat launches per capita, and percent water cover.

Figure 6.4 shows that the communities of Ocean City, MD; Barnegat Light, NJ; and Brielle, NJ all possess index scores in excess of the one standard deviation threshold for both indices indicating that these communities are likely seeing signs of gentrification. Additionally, the communities of Orange Beach, AL; Grand Isle, LA; Atlantic Beach, NC; Montauk, NY; and Port Aransas, TX each exceed the threshold for the natural amenities index, and are approaching the threshold for the retiree migration index suggesting the these communities are vulnerable to or in the early stages of gentrification.

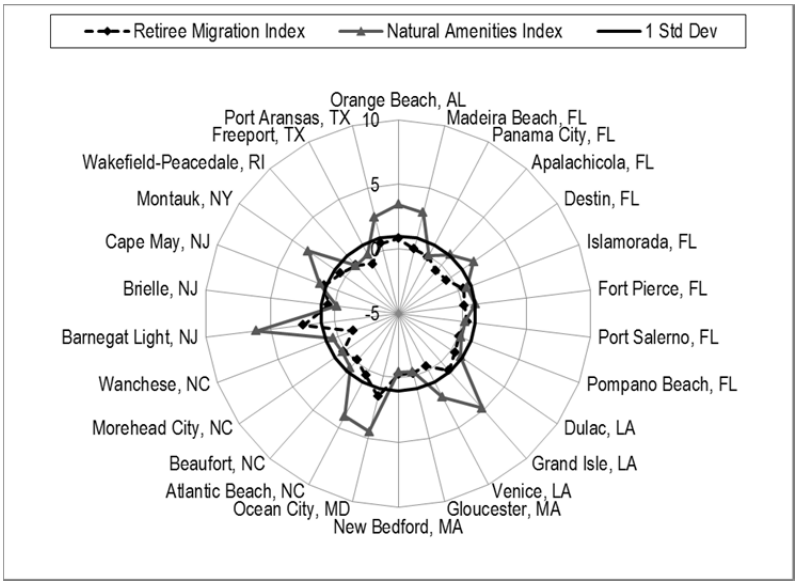

Figure 6.4 Gentrification Vulnerability Indices by HMS Community

Chapter 6 References

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7. BYCATCH, INCIDENTAL CATCH, AND PROTECTED SPECIES

In 1998, NMFS developed a national bycatch plan, *Managing the Nation's Bycatch* (NMFS, 1998), which includes programs, activities, and recommendations for federally managed fisheries. The national goal of NMFS's bycatch plan activities is to implement conservation and management measures for living marine resources that will minimize, to the extent practicable, bycatch and the mortality of bycatch that cannot be avoided. Inherent in this goal is the need to avoid bycatch, rather than create new ways to utilize bycatch. The plan also established a definition of bycatch as fishery discards, retained incidental catch, and unobserved mortalities resulting from a direct encounter with fishing gear. Further discussion of fishery bycatch, incidental catch, and protected species, including standardized reporting of bycatch, bycatch reduction in HMS fisheries, and evaluation and monitoring of bycatch, is available in this chapter of the 2011 HMS SAFE Report. The bycatch in each HMS fishery is summarized and reported annually in the HMS SAFE Report. The effectiveness of bycatch reduction measures is evaluated based on this summary.

7.1 Bycatch Reduction and the Magnuson-Stevens Act

According to the Magnuson-Stevens Act, "The term 'bycatch' means fish which are harvested in a fishery, but which are not sold or kept for personal use, and includes economic discards and regulatory discards. Such term does not include fish released alive under a recreational catch and release fishery management program." Fish is defined as finfish, mollusks, crustaceans, and all other forms of marine animal and plant life other than marine mammals and birds. Birds and marine mammals are therefore not considered bycatch under the Magnuson-Stevens Act, but are examined as incidental catch.

NS 9 of the Magnuson-Stevens Act requires that fishery conservation and management measures shall, to the extent practicable, minimize bycatch and minimize the mortality of bycatch that cannot be avoided. In many fisheries, it is not practicable to eliminate all bycatch and bycatch mortality. Some relevant examples of fish caught in Atlantic HMS fisheries that are included as bycatch or incidental catch are marlin, undersized swordfish, and bluefin tuna caught by commercial fishing gear; undersized swordfish and tunas in recreational hook and line fisheries; species for which there is little or no market such as blue sharks; and species caught and released in excess of a bag limit.

7.2 Evaluation and Monitoring of Bycatch in HMS Fisheries

The identification of bycatch in Atlantic HMS fisheries is the first step in reducing bycatch and bycatch mortality. The Magnuson-Stevens Act requires the amount and type of bycatch to be summarized in the annual SAFE reports. A summary of bycatch species, data collection methods, and management measures by fishery/gear type is found in Table 7.1.

Pelagic longline fishery dead discards of swordfish, bluefin tuna, billfish, large coastal sharks, and pelagic sharks are estimated using data from NMFS observer reports and logbook reports. Shark bottom longline and shark gillnet fishery discards can be estimated using logbook data and observer reports as well. Shark gillnet discards have also been estimated using logbook data when observer coverage is equal to 100 percent.

NMFS has not estimated bycatch in the swordfish harpoon fishery. NMFS has limited historical observer data on harpooned swordfish from driftnet trips in which harpoons were sometimes used. Swordfish harpoon fishermen are required to submit pelagic logbooks and NMFS can examine those for their utility in estimating bycatch. NMFS has not estimated bycatch in the bluefin tuna harpoon fishery because these fishermen have not been selected to submit logbooks. NMFS has not estimated bycatch in the General category commercial rod and reel tuna fishery although anecdotal evidence indicates that some undersized bluefin tuna may be captured.

There is concern about the accuracy of discard estimates in the recreational rod and reel fishery for Atlantic HMS due to the low number of observations by the Large Pelagics Survey (LPS) and the Marine Recreational Information Program (MRIP). Recreational bycatch estimates (numbers of fish released alive and dead) are not currently available, except for bluefin tuna. For some species, encounters are considered rare events, which might result in bycatch estimates with considerable uncertainty. Due to improvements in survey methodology, increased numbers of intercepts (interviews with fishermen) have been collected since 2002. NMFS may develop bycatch estimates (live and dead discards) and estimates of uncertainty for the recreational fishery from the LPS. These data will be included in future HMS SAFE Reports. Bycatch estimates may also be examined for the recreational fishery with the use of tournament data.

Table 7.1 Summary of Bycatch Species, Marine Mammal Protection Act Category, Endangered Species Act Requirements, Data Collection, and Management Measures (Year Implemented) for HMS Fisheries, by Fishery/Gear Type

Fishery/Gear Type	Bycatch Species	MMPA Category	ESA Requirements	Bycatch Data Collection	Management Measures
Pelagic longline	Bluefin tuna Billfish Undersize target species Marine mammals Sea turtles Seabirds Non-target finfish Prohibited shark species Large coastal shark species after closure	Category I	Jeopardy findings in 2000 & 2004; Reasonable and Prudent Alternative implemented 2001-04; ITS, Terms & Conditions, RPMs; Consultation reinitiated in 2014?	Permit requirement (1985); logbook requirement (SWO-1985; SHK - 1993); observer requirement (1992), EFPs (2001-present)	BFT target catch requirements (1981); quotas (SWO - 1985; SHK - 1993); prohibit possession of billfish (1988); minimum size (1995); gear marking (1999); line clippers, dipnets (2000); MAB closure (1999); limited access (1999); limit the length of mainline (1996-1997 only); move 1 nm after an interaction (1999); voluntary vessel operator workshops (1999); GOM closure (2000); FL, Charleston Bump, NED closures (2001); gangion length, corrodible hooks, de-hooking devices, handling & release guidelines (2001); NED experiment (2001-03); VMS (2003); circle hooks and bait requirements (2004); mandatory safe handling and release workshops (2006); sea turtle control device (2008); closed area research (2008-10); marine mammal handling and release placard, 20 nm mainline restriction in MAB, observer and research requirements in Cape Hatteras Spec. Research Area (CHSRA), increased observer coverage in Atl PLL fishery (2009), weak hook requirement in GOM (2011); Amendment 7 Individual Bluefin Quotas, Gear Restricted Areas, Electronic Monitoring, VMS reporting (2014)
Shark bottom longline	Prohibited shark species Target species after closure Sea turtles Smalltooth sawfish Non-target finfish	Category III	ITS, Terms & Conditions, RPMs	Permit requirement (1993); logbook requirement (1993); observer coverage (1994)	Quotas (1993); trip limit (1994); gear marking (1999); handling & release guidelines (2001); line clippers, dipnets, corrodible hooks, de-hooking devices, move 1 nm after an interaction (2004); South Atlantic closure, VMS (2005); shark identification workshops for dealers (2007); sea turtle control device (2008); shark research fishery (2008)
Shark gillnet	Prohibited shark species Sea turtles	Category II	ITS, Terms & Conditions, RPMs	Permit requirement (1993); logbook requirement (1993);	Quotas (1993); trip limit (1994); gear marking (1999); deployment restrictions (1999); 30-day closure for leatherbacks (2001); handling & release guidelines

Fishery/Gear Type	Bycatch Species	MMPA Category	ESA Requirements	Bycatch Data Collection	Management Measures
	Marine mammals Non-target finfish Smalltooth sawfish			observer coverage (1994)	(2001); net checks (2002); whale sighting (2002); VMS (2004); closure for right whale mortality (2006); shark identification workshops for dealers (2007)
Bluefin tuna purse seine	Undersize target species Non-target finfish	Category III	ITS, Terms & Conditions	Permit requirement (1982); observer requirement (1996, 2001 only); EFPs (2002-03)	Quotas (1975); limited access, individual vessel quotas (1982); minimum size (1982); Amendment 7 VMS requirements and reporting (2014)
Bluefin tuna & swordfish harpoon	Undersize target species	Category III	ITS, Terms & Conditions	Permit requirement (BFT - 1982; SWO - 1987); SWO logbook requirement (1987)	Quotas (BFT - 1982; SW0 - 1985); minimum size (BFT - 1982; SWO - 1985); Amendment 7 online catch reporting (2014)
Handgear - commercial	Undersize target species Non-target finfish	Category III	ITS, Terms & Conditions	Permit requirement (BFT - 1982; SWO 1987; SHK - 1993); logbook requirement (SWO - 1985; SHK - 1993)	Regulations vary by species, including quotas, minimum sizes, retention limits, landing form; Amendment 7 online catch reporting (2014)
Handgear - recreational	Undersize target species Non-target finfish	Category III	ITS, Terms & Conditions	Large Pelagics Survey (1992); MRFSS (1981)	Regulations vary by species, including minimum sizes, retention limits, landing form; BFT quotas

MMPA – Marine Mammal Protection Act; ESA – Endangered Species Act; ITS – Incidental take statement; MRFSS – Marine Recreational Fishing Statistics Survey; EFPs – Exempted fishing permits; BFT – Bluefin tuna; SWO – Swordfish; SHK – Shark; GOM – Gulf of Mexico; NED – North East Distant; MAB – Mid Atlantic Bight; PLL – Pelagic longline; VMS – Vessel monitoring system.

7.2.1 Bycatch Mortality

The reduction of bycatch mortality is an important component of NS 9. Physical injuries may not be apparent to the fisherman who is quickly releasing a fish because there may be injuries associated with the stress of being hooked or caught in a net. Little is known about the mortality rates of many of the species managed under this FMP, but there are some data for certain species. Information on bycatch mortality of these fish should continue to be collected, and in the future, could be used to estimate bycatch mortality in stock assessments.

NMFS submits annual data (Task II) to ICCAT on mortality estimates (dead discards). These data are included in the HMS SAFE reports and U.S. National Reports to ICCAT to evaluate bycatch trends in HMS fisheries.

Pelagic Longline Fishery

NMFS collects data on the disposition (released alive or dead) of bycatch species from logbooks submitted by fishermen in the PLL fishery. Observer reports also include disposition of the catch as well as information on hook location, trailing gear, and injury status of protected species interactions. These data are used to estimate post-release mortality of sea turtles and marine mammals based on guidelines for each (Angliss and DeMaster 1998, Ryder et al. 2006). See Section 4 for estimates of sea turtle and marine mammal bycatch.

Purse Seine Fishery

NMFS has limited observer data on the bluefin tuna purse seine fishery. There are no recorded instances of non-tuna finfish, other than minimal numbers of blue sharks, caught in tuna purse seines. Anecdotal evidence indicates that if fish are discarded, they are easily released out of the net with minimal bycatch mortality.

Bottom Longline Fishery

The shark BLL fishery has relatively low observed bycatch rates. Historically, finfish bycatch has averaged approximately five percent in the BLL fishery. Observed protected species bycatch (sea turtles) has typically been much lower, less than 0.01 percent of the total observed catch. Disposition of discards is recorded by observers and can be used to estimate discard mortality.

Shark Gillnet Fishery

Many shark gillnet fishermen have been targeting finfish rather than sharks as a result of Amendments 2 and 3 to the Consolidated Atlantic Highly Migratory Species Management Plan (NMFS 2007, 2010). A total of 225 gillnet sets were observed in 2013. Disposition of discards is recorded by observers and can be used to estimate discard mortality. There were no protected species interactions observed in any gillnet sets in 2013 (Mathers et al. 2014).

Commercial Handgear Fishery

Vessels targeting bluefin tuna with harpoon gear have not been selected for observer coverage since the deliberate fishing nature of the gear is such that bycatch is expected to be low. Therefore, there are no recorded instances of non-target finfish caught with harpoons and NMFS cannot quantify the bycatch of undersized bluefin tuna in this fishery. Bycatch in the swordfish

harpoon fishery is expected to be virtually, if not totally, non-existent. Since bycatch approaches zero in this fishery, it follows that bycatch mortality is near zero. Disposition of bycatch reported in logbooks is used to estimate mortality of bycatch in the hook and line handgear fisheries.

Recreational Handgear Fishery

The LPS collects data on disposition of bycatch (released alive or dead) in recreational HMS fisheries. Rod and reel discard estimates from Virginia to Maine during June through October can be monitored through the expansion of survey data derived from the LPS (dockside and telephone surveys). However, the actual numbers of fish discarded for many species are low. Post-release mortality studies have been conducted on few HMS at this time. Summaries of those studies can be found in previous SAFE reports.

7.3 Protected Species Interactions in HMS Fisheries

This section examines the interaction between protected species and Atlantic HMS fisheries managed under the 2006 Consolidated HMS FMP. As a point of clarification, interactions are different than bycatch. Interactions take place between fishing gears and marine mammals and seabirds, while bycatch consists of the incidental take and discards of non-targeted finfish, shellfish, mollusks, crustaceans, sea turtles, and any other marine life other than marine mammals and seabirds. A more detailed review of the three acts (Marine Mammal Protection Act (MMPA), Endangered Species Act (ESA), and Migratory Bird Treaty Act (MBTA)) affecting protected species, along with a description of the Pelagic Longline Take Reduction Team (http://www.nmfs.noaa.gov/pr/interactions/trt/pl-trt.htm), Take Reduction Plan, and measures to address protected species concerns, is available in the 2011 HMS SAFE Report. The interaction of seabirds and longline fisheries are also considered under the United States "National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries" (NPOA – Seabirds). Bycatch of HMS in other fisheries is also discussed in the 2011 HMS SAFE Report, and estimates of blacknose shark bycatch in the shrimp fisheries are available in the most recent stock assessment, SEDAR 21 (Cortés and Baremore, 2011).

7.3.1 Interactions and the Marine Mammal Protection Act

Under MMPA requirements, NMFS produces an annual List of Fisheries (LOF) that classifies domestic commercial fisheries, by gear type, relative to their rates of incidental mortality or serious injury of marine mammals. The LOF includes three classifications:

1. Category I fisheries are those with frequent serious injury or mortality to marine mammals;
2. Category II fisheries are those with occasional serious injury or mortality; and
3. Category III fisheries are those with remote likelihood of serious injury or mortality to marine mammals.

The final 2014 MMPA LOF was published on March 14, 2014 (79 FR 14418); the proposed 2015 MMPA LOF was published on August 25, 2014 (79 FR 50589). The Atlantic Ocean, Caribbean, and Gulf of Mexico large PLL fishery is classified as Category I (frequent serious injuries and mortalities incidental to commercial fishing) and the southeastern Atlantic

shark gillnet fishery is classified as Category II (occasional serious injuries and mortalities). A summary of the observed and estimated marine mammal interactions with the PLL fishery is presented in Table 4.7**.** The following Atlantic HMS fisheries are classified as Category III (remote likelihood or no known serious injuries or mortalities): Atlantic tuna purse seine; Gulf of Maine and Mid-Atlantic tuna, shark and swordfish, hook-and-line/harpoon; southeastern Mid-Atlantic and Gulf of Mexico shark BLL; and Mid-Atlantic, southeastern Atlantic, and Gulf of Mexico pelagic hook-and-line/harpoon fisheries. Commercial passenger fishing vessel (charter/headboat) fisheries are subject to Section 118 and are listed as a Category III fishery. Recreational vessels are not categorized since they are not considered commercial fishing vessels.

Fishermen participating in Category I or II fisheries are required to register under the MMPA and to accommodate an observer aboard their vessels if requested. Vessel owners or operators, or fishermen, in Category I, II, or III fisheries must report all incidental mortalities and serious injuries of marine mammals during the course of commercial fishing operations to NMFS. There are currently no regulations requiring recreational fishermen to report takes, nor are they authorized to have incidental takes (i.e., they are illegal).

7.3.2 Interactions and the Endangered Species Act (ESA)

Sea Turtles

NMFS has taken numerous steps in the past few years to reduce sea turtle bycatch and bycatch mortality in domestic longline fisheries. A summary of those steps can be found in Chapter 4 and previous SAFE reports. As noted in Chapter 4, sea turtle interactions have decreased since these steps have been taken.

Smalltooth Sawfish

NMFS designated critical habitat for smalltooth sawfish in September 2009 (74 FR 45353). NMFS believes that smalltooth sawfish takes in the shark gillnet fishery are rare given the low reported number of takes and high rate of observer coverage. The fact that there were no smalltooth sawfish caught during 2001, when 100 percent of the fishing effort was observed, indicates that smalltooth sawfish takes (observed or total) most likely do not occur on an annual basis. Based on this information, the 2003 biological opinion estimated that one incidental capture of a sawfish (released alive) over five years would occur as a result of the use of gillnets in this fishery (NMFS, 2003a). No smalltooth sawfish were observed in shark gillnet fisheries for 2012.

Interactions with Seabirds

The NPOA-Seabirds (http://www.nmfs.noaa.gov/ia/species/seabirds/us_npoa.pdf) was released in February 2001, and calls for detailed assessments of longline fisheries, and, if a problem is found to exist within a longline fishery, for measures to reduce seabird bycatch within two years. Because interactions appear to be relatively low in Atlantic HMS fisheries, the adoption of immediate measures is unlikely. The 2014 Report on the Implementation of the United States National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries was submitted to the UN FAO in June 2014 and can be found here http://www.nmfs.noaa.gov/ia/resources/publications/ccrf/longline_fisheries.pdf.

Gannets, gulls, greater shearwaters, and storm petrels are occasionally hooked in the Atlantic pelagic longline fishery. These species and all other seabirds are protected under the MBTA. The majority of longline interactions with seabirds occur as the gear is being set. The birds eat the bait and become hooked on the line. The line then sinks and the birds are subsequently drowned.

Bycatch of seabirds in the shark BLL fishery has been virtually non-existent. A single pelican has been observed killed from 1994 through 2013. No expanded estimates of seabird bycatch or catch rates for the BLL fishery have been made due to the rarity of seabird takes.

7.4 Bycatch of HMS in Other Fisheries

The following section summarizes the bycatch of HMS in any federal or state-managed fishery which captures them. More detailed information, including a description of HMS bycatch in the menhaden purse seine fishery, was presented in the 2011 HMS SAFE Report. NMFS continues to solicit bycatch data on HMS from all state, interjurisdictional, and Federal data collection programs.

7.4.1 Squid Mid-Water Trawl

U.S. squid trawl fishermen, using mid-water gear, landed 27.6 mt ww of yellowfin tuna, skipjack tuna, albacore tuna, bigeye tuna, and swordfish in 2012 incidental to the squid, mackerel, and butterfish trawl fishery (Table 7.2). Bycatch of HMS in other trawl fisheries may be included as a portion of the overall reported trawl landings in Table 7.2. Landings increased from 2010 for bigeye tuna and albacore. Swordfish landings remain low relative to the directed fishery landings but have increased in 2009-2011. An Incidental HMS Squid Trawl permit allows squid trawl fishermen with an *Illex* squid trawl moratorium permit to land up to 15 swordfish per trip, although regulatory discards may still occur.

Table 7.2 Atlantic HMS Landed (mt ww) Incidental to Trawl Fisheries (2006-2013)

Species	2006	2007	2008	2009	2010	2011	2012	2013
Yellowfin tuna	0.7	2.40	0.00	0.0	1.4	1.3	0.2	0
Skipjack tuna	0.7	<0.01	<0.01	0.0	0.0	0.0	0.006	0
Bigeye tuna	0.0	0.40	0.00	0.0	0.7	1.2	0.2	0
Albacore tuna	1.1	0.30	0.01	0.08	0.2	2.0	0.3	0
Swordfish	3.5	6.50	7.60	22.7	21.2	17.9	26.8	2.9
Total	6.0	9.61	7.61	22.8	22.5	22.4	27.6	2.9

Source: NMFS, 2014.

7.4.2 Shrimp Trawl Fishery

For a summary of shark bycatch in the shrimp trawl fishery, please see the 2011 HMS SAFE Report. More recent estimates of blacknose shark bycatch in the shrimp fisheries can be found in the most recent blacknose stock assessment, SEDAR 21 (Cortés, E. and I. Baremore, 2011). Estimates of Atlantic sharpnose and bonnethead shark bycatch in the shrimp fisheries can be found in the most recent stock assessment reports for each (SEDAR 34).

7.5 Effectiveness of Existing Pelagic Longline Time/Area Closures and Gear Restrictions in Reducing Bycatch

Since 2000, NMFS has implemented a number of time/area closures and gear restrictions in the Atlantic Ocean and Gulf of Mexico for the PLL fishery to reduce discards and bycatch of a number of species (juvenile swordfish, bluefin tuna, billfish, sharks, sea turtles, etc.). Circle hooks are required for the entire PLL fishery since July 2004. In May 2011, NMFS implemented a requirement that only "weak" circle hooks be used in the Gulf of Mexico PLL fishery in order to reduce the bycatch of bluefin tuna. Weak hooks are made with thinner wire (no larger than 3.65 mm in diameter) than standard hooks, which allows them to bend more easily and release large bluefin tuna quickly, thus allowing them to escape. Preliminary analyses of the effectiveness of the closures and combined closures and circle hook requirement are summarized here. Preliminary analysis of the effectiveness of weak hooks is being conducted. A brief summary of the prohibition of live bait in the Gulf of Mexico PLL fishery is available in the 2011 HMS SAFE Report.

The combined effects of the individual area closures and gear restrictions were examined by comparing the reported catch and discards from 2005-2013 to the averages for 1997-1999 throughout the U.S. Atlantic fishery. Previous analyses attempted to examine the effectiveness of the time/area closures only by comparing the 2001-2003 reported catch and discards to the base period (1997-1999) chosen and are included here for reference. The percent changes in the reported numbers of fish caught and discarded were compared to the predicted changes from the analyses in Regulatory Amendment 1 to the 1999 FMP (NMFS, 2000). Overall effort, expressed as the number of hooks reported set, declined by 24.4 percent during 2005-2013 from 1997-1999 (Table 7.3). Declines were noted for both the numbers of kept and discards of almost all species examined including swordfish, tunas, sharks, billfish, and sea turtles. The only positive changes from the base period were the numbers of bluefin tuna and dolphin kept and bluefin tuna and large coastal shark discards. The reported number of bluefin tuna kept increased by 56.4 percent for 2005-2013 compared to 1997-1999 (Table 7.3). The number of reported discards of bluefin tuna increased by 10.6 percent between the same time periods, which is almost exactly the predicted 10.7 percent increase from the analyses in Regulatory Amendment 1. The number of dolphin kept increased by only 1.5 percent (Table 7.3). Reported billfish (blue marlin, white marlin, and sailfish) discards decreased by 54 - 64 percent from 1997-1999 to 2005-2013 (Table 7.4). The reported discards of spearfish increased by almost 9 percent, although the absolute number of discards was low. The reported number of turtle interactions decreased by almost 72 percent from 1997-1999 to 2005-2013.

The reported declines in swordfish kept and discarded, large coastal sharks kept, and BAYS tuna kept decreased more than the predicted values developed for Regulatory Amendment 1. Reported discards of pelagic sharks, all billfish (with the exception of spearfish for which no predicted change was developed in Regulatory Amendment 1), and turtle interactions also declined more than the predicted values. The number of large coastal shark discards increased slightly from 1997-1999 to 2005-2013. The number of bluefin tuna discards and dolphin kept has increased.

The reported distribution of effort over the same time periods was also examined for changes in fishing behavior (Table 7.5). Declines in the number of hooks set were noted for all

areas with the exception of the Sargasso (SAR) area, where reported effort has increased almost ten-fold from the 1997-1999 period. However, this effort represents only 2.1 percent of the overall effort reported in the fishery. Effort also increased in the Florida East Coast (FEC) area by 10.3 percent and in the South Atlantic Bight (SAB) and Mid-Atlantic Bight (MAB) by 3.2 and 0.4 percent, respectively. Overall, reported effort decreased by 24.4 percent from 1997-1999 to 2005-2013. Reported effort declined by 40 percent or more in all other areas with the exception of the Gulf of Mexico. As a result of the Deepwater Horizon/BP oil spill in the Gulf of Mexico and the subsequent closures, reported effort for 2010 was dramatically reduced, less than one third of the reported effort of the previous year (2009). Reported effort in 2012 increased from 2011, butdeclined in 2013 slightly. Reported effort declined by 61.6 percent in the SAT area (Tuna North and Tuna South combined), but this represents less than three percent of total reported effort. Reported effort in the Caribbean area (CAR) declined by over 80 percent in 2005-2013 from 1997-99, but this area accounts for less than one percent of the total effort.

Concern over the status of bluefin tuna and the effects of the PLL fishery on bluefin tuna led to a re-examination of a previous analysis which compared the reported catch and discards of select species or species groups from the MAB and NEC to that reported from the rest of the fishing areas (Table 7.6). The number of bluefin tuna discards reported from the MAB/NEC had been increasing from 2006-2010 but decreased in 2011 and 2012. The number of bluefin tuna discards decreased even further to 55 in 2013. The discards from the other areas have remained relatively constant. The increase in bluefin tuna discards in the MAB/NEC does not appear to be effort-related as the reported number of hooks set has also been relatively stable (MAB) or in decline (NEC).

Table 7.3 Number of Swordfish, Bluefin Tuna, Yellowfin Tuna, Bigeye Tuna, and Total BAYS (Bigeye, Albacore, Yellowfin and Skipjack Tuna) Reported Landed or Discarded in the U.S. Atlantic Pelagic Longline Fishery (1997 – 2013) and Percent Changes Since 1997-99

Year	Number of Hooks Set (x1000)	Swordfish Kept	Swordfish Discards	Bluefin Tuna Kept	Bluefin Tuna Discards	Yellowfin Tuna Kept	Yellowfin Tuna Discards	Bigeye Tuna Kept	Bigeye Tuna Discards	Total BAYS Kept	Total BAYS Discards
1997-99	8,533.1	69,131	21,519	238	877	72,342	2,489	21,308	1,133	101,477	4,224
(A) 2001-03	7,364.1	50,838	13,240	212	607	55,166	1,827	13,524	395	76,116	3,069
2004	7,325.9	46,950	10,704	476	1,031	64,128	1,736	8,266	486	77,989	3,452
2005	5,922.6	41,239	11,158	376	766	43,833	1,316	8,383	369	57,237	2,545
2006	5,662.0	38,241	8,900	261	833	55,821	1,426	12,491	257	73,058	2,865
2007	6,290.6	45,933	11,823	357	1,345	56,062	1,452	8,913	249	70,390	3,031
2008	6,498.1	48,000	11,194	343	1,417	33,774	1,717	11,254	356	50,108	3,427
2009	6,978.9	45,378	7,484	629	1,290	40,912	1,701	10,379	397	57,461	3,555
2010	5,729.1	33,813	6,107	392	1,488	32,567	748	12,561	476	51,786	1,590
2011	5,914.5	38,012	8,510	355	764	40,993	728	16,338	453	68,401	2,850
2012	7,678.5	51,544	7,996	392	563	59,188	1,046	14,841	459	84,707	3,113
2013	7,305.9	44,556	4,765	273	266	39,988	941	15,472	513	67,073	2,376
(B) 2005-13	6,442.2	42,968	8,660	375	970	44,793	1,231	12,292	392	64,469	2,817
% dif (A)	-13.7	-26.5	-38.5	-10.9	-30.8	-23.7	-26.6	-36.5	-65.1	-25.0	-27.3
% dif (B)	-24.5	-37.8	-59.6	57.7	10.6	-38.1	-50.6	-42.3	-65.4	-36.5	-33.3
Pred [1]		-24.6	-41.5		-1.0					-5.2	
Pred [2]		-13.0	-31.4		10.7					10.0	

(A) and (B) are average values for the years indicated. Predicted values from Regulatory Amendment 1, where Pred [1] = without redistribution of effort, Pred [2] = with redistribution of effort. Source: Fisheries Logbook System.

Table 7.4 Number of Pelagic Sharks, Large Coastal Sharks, Dolphinfish, and Wahoo Reported Landed or Discarded and Number of Billfish (Blue and White Marlin, Sailfish, and Spearfish) and Sea Turtles Reported Caught and Discarded in the U.S. Atlantic Pelagic Longline Fishery (1997 – 2013) and Percent Changes Since 1997-99

Year	Pelagic Sharks Kept	Pelagic Shark Discards	Large Coastal Sharks Kept	Large Coastal Shark Discards	Dolphinfish Kept	Dolphinfish Discards	Wahoo Kept	Wahoo Discards	Blue Marlin Discards	White Marlin Discards	Sailfish Discards	Spearfish Discards	Sea Turtles
1997-99	3,898	52,093	8,860	6,308	39,711	608	5,172	175	1,621	1,973	1,342	213	596
(A) 2001-03	3,237	23,017	5,306	4,581	29,361	322	3,776	74	815	1,045	341	139	429
2004	3,460	25,414	2,304	5,144	39,561	295	4,674	35	713	1,060	425	172	370
2005	3,150	21,560	3,365	5,881	25,709	556	3,360	280	569	990	367	155	154
2006	2,098	24,113	1,768	5,326	25,658	1,041	3,608	100	439	557	277	142	128
2007	3,504	27,478	546	7,133	68,124	467	3,073	52	611	744	321	147	300
2008	3,500	28,786	115	6,732	43,511	404	2,571	82	686	669	505	196	476
2009	3,060	33,721	403	6,672	62,701	433	2,648	81	1,013	1,064	774	335	137
2010	3,872	45,511	434	6,726	30,454	174	749	26	504	605	312	212	94
2011	3,694	43,778	130	6,085	29,442	335	1,848	50	539	921	556	281	66
2012	2,794	23,038	86	7,716	42,445	432	3,121	92	843	1,432	767	270	61
2013	3,394	28,800	50	8,629	34,250	181	2,721	59	844	1,239	456	342	92
(B) 2005-13	3,230	30,757	766	6,796	40,255	448	2,633	92	678	916	488	231	167.6
% diff (A)	-17.0	-55.8	-40.1	-27.4	-26.1	-47.0	-27.0	-57.7	-49.7	-47.0	-74.6	-34.7	-28.0
% diff (B)	-17.1	-41.0	-91.4	7.7	1.4	-26.3	-49.1	-47.4	-58.1	-53.6	-63.7	8.5	-71.9
Pred [1]	-9.5	-2.0	-32.1	-42.5	-29.3				-12.0	-6.4	-29.6		-1.9
Pred [2]		8.4	-18.5	-33.3	-17.8				6.5	10.8	-14.0		7.1

(A) and (B) are average values for the years indicated. Predicted values from Regulatory Amendment 1 where Pred [1] = without redistribution of effort, Pred [2] = with redistribution of effort. Source: Fisheries Logbook System.

4.1

Table 7.5 Reported Distribution of Hooks Set by Area (1997-2013) and Percent Change Since 1997-99

Year	CAR	GOM	FEC	SAB	MAB	NEC	NED	SAR	NCA	SAT	Total
1997-99	328,110	3,346,298	722,580	813,111	1,267,409	901,593	511,431	14,312	191,478	436,826	8,533,148
(A) 2001-03	175,195	3,682,536	488,838	569,965	944,929	624,497	452,430	76,130	222,070	127,497	7,364,086
2004	298,129	4,118,468	264,524	672,973	856,521	462,171	455,862	128,582	20,990	47,730	7,325,950
2005	180,885	3,037,968	323,551	467,680	835,091	356,696	462,490	110,107	55,716	92,382	5,922,566
2006	73,774	2,577,231	281,239	544,647	1,085,640	406,199	339,586	135,575	64,500	153,620	5,662,011
2007	32,650	2,914,475	345,486	737,873	1,319,056	326,532	285,827	100,336	11,409	207,598	6,281,242
2008	87,190	2,368,381	642,846	846,984	1,423,136	579,244	224,635	147,969	16,148	152,763	6,489,246
2009	34,783	3,037,197	830,348	847,525	1,199,657	481,110	262,003	107,172	0	179,152	6,978,947
2010	77,710	1,005,764	1,097,929	1,002,748	1,295,242	657,892	211,465	141,713	3,096	235,553	5,729,112
2011	29,600	1,247,892	1,129,555	984,858	1,330,542	665,706	173,038	206,923	11,270	135,069	5,914,453
2012	7,200	2,655,468	1,285,060	937,946	1,513,367	787,681	127,044	171,177	3,300	190,211	7,678,454
2013	38.090	2,304,802	1,239,326	1,185,433	1,450,434	516,159	152,896	242,920	11,758	164,079	7,305,897
(B) 2005-13	62,431	2,349,909	797,260	839,522	1,272,463	530,802	248,776	151,544	19,689	167,825	6,440,214
% diff (A)	-46.6	10.0	-32.3	-29.9	-25.4	-30.7	-11.5	431.9	16.0	-70.8	-13.7
% diff (B)	-81.0	-29.8	10.3	3.2	0.4	-41.1	-51.4	958.9	-89.7	-61.6	-24.5

(A) and (B) are average values for the years indicated. CAR – Caribbean; GOM - Gulf of Mexico; FEC - Florida East Coast; SAB - South Atlantic Bight; MAB - Mid-Atlantic Bight; NEC - Northeast Coastal; NED - Northeast Distant; SAR - Sargasso; NCA - North Central Atlantic; SAT - Tuna North & Tuna South. Source: Fisheries Logbook System.

Table 7.6 Number of Bluefin Tuna, Swordfish, Pelagic and Large Coastal Sharks, Billfish, and Sea Turtles Reported Kept and/or Discarded in the Mid-Atlantic Bight and Northeast Coastal Areas Combined (1997-2013)

Year	Hooks Set (x1000)	BFT Kept	BFT Discards	SWO Kept	SWO Discards	PEL Shark Kept	PEL Shark Discards	LCS Kept	LCS Discards	Billfish Discards	Sea Turtle Interactions
1997	2,441.1	96	583	6,330	3,663	3,062	40,515	6,670	958	803	52
1998	2,207.4	94	1,157	9,684	4,923	2,143	28,579	1,781	890	401	57
1999	1,858.5	70	335	8,213	4,331	1,680	12,479	1,966	736	818	174
2000	1,645.4	26	356	8,748	2,846	2,099	13,083	4,744	1,407	240	30
2001	1,975.3	45	200	10,661	4,000	2,537	9,013	4,383	997	310	69
2002	1,582.3	18	389	10,986	4,219	2,378	7,308	2,331	1,207	311	41
2003	1,150.7	67	471	10,888	3,022	2,222	6,929	2,787	1,429	172	42
2004	1,318.7	128	709	8,486	2,463	2,323	7,594	923	1,488	219	54
2005	1,191.8	96	575	9,184	2,420	1,912	7,026	2,512	2,433	473	44
2006	1,491.8	124	737	10,278	2,564	1,428	7,547	1,279	2,180	266	28
2007	1,645.6	137	1,148	14,102	3,082	2,313	8,169	431	2,861	407	55
2008	2,002.5	143	1,133	13,208	3,199	2,695	9,541	63	1,781	320	100
2009	1,608.8	137	952	12,657	1,896	2,256	14,113	206	2,210	299	16
2010	1,953.1	155	1,301	9,090	1,546	3,326	17,033	408	2,293	376	32
2011	1,996.3	168	583	9,995	2,474	2,793	19,867	90	1,809	497	28
2012	2,301.1	102	270	12,597	1,396	2,199	13,535	9	1,972	650	16
2013	1,966.6	55	107	9,806	2,766	2,711	17,958	9	1,366	693	31

BFT - Bluefin tuna; SWO – Swordfish; PEL – Pelagic sharks; LCS - Large coastal sharks; MAB - Mid-Atlantic Bight; NEC - Northeast Coastal. Source: Fisheries Logbook System.

Table 7.7 Number of Bluefin Tuna, Swordfish, Pelagic and Large Coastal Sharks, Billfish, and Sea Turtles Reported Kept and/or Discarded in All Areas Other than the Mid-Atlantic Bight and Northeast Coastal (1997-2013)

Year	Hooks Set (x1000)	BFT Kept	BFT Discards	SWO Kept	SWO Discards	PEL Shark Kept	PEL Shark Discards	LCS Kept	LCS Discards	Billfish Discards	Turtle Interactions
1997	7,233.5	111	123	62,892	16,892	2,048	41,507	7,076	6,911	6,091	215
1998	5,823.9	143	164	60,943	18,422	1,588	16,682	4,677	4,687	3,364	833
1999	6,035.1	200	269	59,331	16,325	1,172	16,516	4,409	4,741	3,968	458
2000	6,376.5	210	382	54,787	13,860	969	14,965	3,014	5,320	3,394	241
2001	5,767.0	138	148	38,575	10,448	974	14,941	2,127	3,895	1,723	352
2002	5,647.3	160	204	39,453	8,963	693	15,160	1,746	2,761	2,866	426
2003	5,969.7	208	410	41,950	9,067	907	14,842	2,565	3,453	1,641	357
2004	6,007.3	348	322	38,464	8,241	1,137	17,820	1,381	3,656	2,151	316
2005	4,730.8	280	191	32,055	8,738	1,238	14,534	853	3,448	1,608	110
2006	4,170.2	137	96	27,963	6,336	670	16,566	489	3,146	1,149	100
2007	4,645.1	200	197	31,831	8,741	1,191	19,309	115	4,272	1,416	245
2008	4,495.7	200	284	29,592	7,995	805	19,245	52	4,951	1,736	376
2009	5,298.2	492	338	32,721	5,588	804	16,608	197	4,462	2,887	121
2010	3,775.9	237	187	24,723	4,561	546	28,478	26	4,433	1,257	62
2011	3,918.2	187	181	28,017	6,036	901	23,911	40	4,276	1,800	38
2012	5,377.4	290	293	38,947	6,600	595	9,503	77	5,744	2,743	45
2013	5,339.3	218	159	34,750	2,583	683	9,842	41	7,263	2,190	61

BFT - Bluefin tuna; SWO – Swordfish; PEL – Pelagic sharks; LCS - Large coastal sharks; MAB - Mid-Atlantic Bight; NEC - Northeast Coastal. Source: Fisheries Logbook System.

7.5.1 Conclusion

The time/area closures and live bait prohibition in the Gulf of Mexico have been successful at reducing bycatch in the HMS pelagic longline fishery. Reported discards of all species of billfish except spearfish have declined. The reported number of turtles caught, swordfish discarded, and pelagic and large coastal shark discards have also declined. However, the number of bluefin tuna discarded has increased.

7.6 Evaluation of Other Bycatch Reduction Measures

NMFS continues to monitor and evaluate bycatch in HMS fisheries through direct enumeration (pelagic and bottom longline observer programs, shark gillnet observer program), evaluation of management measures (closed areas, trip limits, gear modifications, etc.), and VMS.

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8. HMS PERMITS AND TOURNAMENTS

This section provides updates for the number of permits issued in conjunction with HMS fishing and dealer activities in 2013. The number of permits for Atlantic HMS fisheries and the number of dealer permits for sharks, swordfish, and tunas are updated through October 2013 and presented in Tables 8.1 - 8.8. Section 8.2 reports the historical number, locations, and target species of HMS tournament registrations with final numbers from the 2012 tournaments season.

8.1 HMS Permits

Detailed information about HMS permits and regulations associated with those permits are available in the most recent HMS Recreational, Commercial, and Dealer Compliance Guides on the internet at http://www.nmfs.noaa.gov/sfa/hms/Compliance_Guide/index.htm.

Limited Access Permits

The LAP program includes six different permit types: Swordfish Directed, Swordfish Incidental, Swordfish Handgear, Shark Directed, Shark Incidental, and Atlantic Tuna Longline. The Swordfish Directed and Incidental permits are valid only if the permit holder also holds both an Atlantic Tuna Longline and a shark permit. Similarly, the Atlantic Tuna Longline permit is valid only if the permit holder also holds both a swordfish (Directed or Incidental, not Handgear) and a shark permit. No additional LAPs are required to make a Swordfish Handgear or any of the shark permits valid.

Table 8.1 Number of Shark, Swordfish, and Atlantic Tuna Longline Limited Access Permits and Permit Holders by State (2007-2014)

State	Directed Swordfish	Incidental Swordfish	Swordfish Handgear	Directed Shark	Incidental Shark	Tuna Longline	Permit Holders/ Permits
ME	4	1	1	2	5	5	8 / 18
MA	6	1	8	3	8	7	18 / 33
RI	1	-	11	1	3	1	12 / 17
CT	1	-	-	-	1	1	1 / 3
NY	16	3	-	10	12	19	25 / 60
PA	2	-	-	1	2	2	3 / 7
NJ	26	11	3	21	26	38	49 / 125
DE	1	-	1	1	2	1	4 / 6
MD	4	-	-	2	2	4	4 / 12
VA	1	1	-	-	2	2	2 / 6
NC	11	7	-	16	11	18	27 / 63
SC	3	1	-	8	8	4	16 / 24
GA	-	-	-	2	2	-	4 / 4
FL	77	29	49	115	125	105	287 / 500
AL	-	-	-	4	2	-	6 / 6
MS	-	-	-	-	1	-	1 / 1
LA	27	5	-	17	32	31	50 / 112
TX	3	7	1	3	13	8	18 / 35
Annual Totals							
2014*	183	66	77	206	258	246	536 / 1,036
2013	185	71	81	220	265	252	556 / 1,074
2012	184	73	77	215	271	253	555 / 1,073
2011	178	67	78	217	262	242	555 / 1,044
2010	177	72	75	215	265	248	566 / 1,052
2009	187	72	81	223	285	259	636 / 1,107
2008	181	76	81	214	285	241	628 / 1,079
2007	180	79	82	231	296	218	613 / 1,086

* As of October 2014. Number of permits and permit holders in each category and state is subject to change as permits are renewed or expire.

Incidental HMS Squid Trawl Permit

On August 10, 2011 NMFS published a final rule (76 FR 49368) that established a new Incidental HMS Squid Trawl Permit, available to all valid Illex squid moratorium permit holders. The permit authorizes the retention of up to 15 swordfish North Atlantic swordfish to be retained per trip, provided that squid constitute not less than 75 percent, by weight, of the total catch on board. The distribution of squid trawl permits by state can be found in Table 8.2.

Table 8.2 Number of Incidental HMS Squid Trawl Permits by State (as of October 2014)

State	Incidental HMS Squid Trawl Permits
ME	4
NH	1
MA	11
RI	10
CT	3
NY	5
NJ	26
VA	5
NC	8
Total	73

Caribbean Small Boat Permit

The final rule (October 1, 2012; 77 FR 59842) to Amendment 4 to the Consolidated HMS FMP established the Caribbean Small Boat Permit. This permit allows the commercial retention of tunas, swordfish, and sharks for boats fishing in the Caribbean region. Currently, the shark retention limit with this permit is zero; however, if the retention limit were increased, permit holders could be allowed to retain and sell non-prohibited species of sharks. As of October 2014, 15 permits have been issued with the majority (10) in Florida. Texas, Mississippi, and Puerto Rico each have one permit. There are two permits in the U.S. Virgin Islands.

General Commercial Swordfish Permit

The General Commercial Swordfish permit was established pursuant to the final rule (August 21, 2013, 78 FR 52012) that implemented Amendment 8 to the 2006 Consolidated HMS FMP. This permit is open access and can be held in conjunction with the Harpoon and General category Atlantic tunas permits. The distribution of General Commercial Swordfish permits is compiled in Table 8.3.

Table 8.3 Number of General Commercial Swordfish Permits by State as of (October 2014)

State	General Commercial Swordfish Permits	State	General Commercial Swordfish Permits
AL	8	MS	2
CA	1	NC	43
CT	23	NH	18
DE	1	NJ	38
FI	21	NY	52
FL	88	PA	3
GA	3	PR	9
KY	1	RI	43
LA	4	SC	7
MA	158	TX	6
MD	3	VA	6
ME	112	VI	1
Total			651

Atlantic Tunas Permits

Commercial Atlantic tunas permits are categorized by gear type (longline, harpoon, trap, purse seine, and General category) (Table 8.4). The Atlantic Tunas General category permit authorizes the use of rod and reel, handline, harpoon, green-stick, and bandit gear, and distribution of the permit by state can be found in Table 8.5. HMS Charter/Headboat permit holders (Table 8.6) may also participate in the commercial tuna fishery.

Table 8.4 Number of Commercial Atlantic Tunas Permits by Category (2006-2014)

Category	2007	2008	2009	2010	2011	2012	2013	2014*
Longline	218	241	259	248	242	253	252	246
Harpoon	26	26	23	29	24	13	14	14***
Trap	9	9	4	6	6	8	7	3
General	3,616	4,031	3,824	3,849	3,764	4,084	3,783	3,396***
Purse seine**	4	4	3	3	3	3	3	5
Total	3,873	4,311	4,113	4,135	4,039	4,361	4,059	3,041

* As of October 2014. The actual number of 2014 permit holders in each category is subject to change as individuals renew their permits or allow them to expire. ** Represents the number of entities eligable to receive Atlantic bluefin tuna purse seine category quota. *** The General and Harpoon categories listed include those held in conjunction with a Swordfish General Commercial permit.

Of the 14 Atlantic Tunas Harpoon category permit issued in 2014, 9 were issued to vessels whose homeport state was Maine and 5 were issued to vessels whose homeport state was Massachusetts.

Table 8.5 Number of Tunas General Category Permits by State or Territory (as of October 2014)

State	Tunas General Category Permits	State	Tunas General Category Permits
AL	31	NC	246
CT	51	NH	201
DE	21	NJ	149
FL	132	NY	139
GA	3	PA	3
GR	1	PR	68
LA	32	RI	107
MA	908	SC	19
MD	28	TX	15
ME	529	VA	65
MI	2	VI	8
MN	1	VT	3
MS	20	Total	2,782

HMS Charter/Headboat Permit

Owners of charterboats or headboats that are used to fish for, take, retain, or possess Atlantic tunas, sharks, swordfish, or billfish must obtain an Atlantic HMS Charter/Headboat permit. The distribution of 2014 Atlantic HMS Charter/Headboat permits is presented in Table 8.6.

Table 8.6 Number of Atlantic HMS Charter/Headboat Permits by State (as of October 2014)

State/Territory	HMS Charter/Headboat Permits	State/Territory	HMS Charter/Headboat Permits
AL	75	NJ	517
CT	72	NY	296
DE	101	OH	1
FL	616	OK	1
GA	22	PA	28
ID	1	PR	23
LA	76	RI	143
MA	718	SC	120
MD	113	TX	108
ME	131	VA	113
MS	33	VI	24
NC	350	WV	3
NH	101	Total	3,742

HMS Angling Permit

The HMS Angling Permit is required to recreationally fish for, retain, or possess (including catch-and-release fishing) any federally-regulated HMS, including sharks, swordfish, white and blue marlin, sailfish, spearfish, bluefin tuna, and BAYS (bigeye, albacore, yellowfin, and skipjack) tunas. It does not authorize the sale or transfer of HMS to any person for a commercial purpose. Atlantic HMS Angling permit distribution is reported in Table 8.7.

Table 8.7 Number of Atlantic HMS Angling Permits (as of October 2014)

State/Country	Permits by Home Port*	Permits by Residence**	State/Country	Permits by Home Port*	Permits by Residence**
AK	2	1	NC	1306	1,184
AL	417	364	ND	1	1
AR	6	13	NE	-	3
AZ	1	3	NH	230	297
BV	1	1	NJ	2911	2,476
CA	2	10	NV	6	7
CO	4	6	NY	1679	1,762
CT	577	652	OH	13	27
DC	-	5	OK	11	22
DE	745	451	OR	1	-
FL	3,897	3,607	PA	179	1,017
GA	120	207	PR	524	536
IA	-	3	RI	532	381
IL	12	30	SC	536	524
IN	4	11	SD	1	2
KS	1	2	TN	25	54
KY	7	15	TX	665	711
LA	706	711	UT	1	3
MA	2,367	2,339	VA	1,062	1,140
MD	991	968	VI	41	20
ME	391	325	VT	17	28
MI	18	27	WA	6	8
MN	1	7	WI	7	10
MO	6	14	WV	5	10
MS	193	232	WY	-	1
MT	5	3	Canada	6	8
Total				20,239	20,239

* The vessel port or other storage location. ** The permit holder's billing address.

Atlantic Tunas, Swordfish, and Sharks Dealer Permits

HMS Dealer permits are open access and required for the "first receiver" of Atlantic tunas, swordfish, and sharks. A first receiver is any entity, person, or company that takes, for

commercial purposes (other than solely for transport), immediate possession of the fish, or any part of the fish, as the fish are offloaded from a fishing vessel. Atlantic tunas, swordfish and sharks dealer permits (by state) are reported in Table 8.8.

Table 8.8 Number of Domestic Atlantic Tunas, Swordfish, and Sharks Dealer Permits (2013 by State; 2006-2014 Totals by Permit)

State/Territory	Bluefin Only	BAYS Only	Bluefin and BAYS	Atlantic Swordfish	Atlantic Sharks	Total
AL	-	1	3	4	3	11
CA	2	-	-	2	-	4
CT	-	1	3	1	-	5
DE	-	1	2	-	-	3
FL	3	9	16	88	29	145
GA	-	-	1	2	1	4
HI	-	-	2	-	-	2
LA	-	1	7	11	8	27
MA	7	12	77	18	7	121
MD	-	1	7	3	3	14
ME	11	-	17	4	1	33
NC	4	6	26	19	17	72
NH	-	-	6	-	-	6
NJ	1	10	38	10	8	67
NY	3	19	52	12	5	91
PA	-	-	2	1	-	3
PR	-	4	1	1	-	6
RI	-	4	28	8	2	42
SC	-	1	2	7	9	19
TX	-	2	1	2	-	5
VA	1	4	13	1	3	22
VI	-	3	1	1	-	5
VT	-	-	1	-	-	1
Annual Totals						
2014*	32	79	308	195	96	710
2013	35	72	318	183	97	705
2012	30	67	313	179	92	681
2011	33	67	316	191	117	724
2010	32	58	323	181	108	702
2009	32	55	289	177	106	659
2008	30	62	303	171	128	694
2007	9	22	255	269	206	761

* As of October 2014. The actual number of permits per state may change as permit holders move or sell their businesses.

Exempted Fishing Permits (EFPs), Display Permits, Letters of Acknowledgement (LOAs) Chartering Permits, and Scientific Research Permits (SRPs)

EFPs, SRPs, and display permits authorize collections of tunas, swordfish, billfishes, and sharks from Federal waters in the Atlantic Ocean and Gulf of Mexico for the purposes of scientific data collection and public display. EFPs are issued to individuals for the purpose of conducting research or other fishing activities aboard private (non-NOAA) vessels, whereas SRPs are issued to agency scientists who are conducting research aboard NOAA vessels. Similar to SRPs, LOAs are issued to individuals conducting research from "bona fide" research vessels on species that are only regulated by Magnuson-Stevens Act and not ATCA. Display permits are issued to individuals who are fishing for, catching, and then transporting HMS to certified aquariums for public display. Chartering permits are issued to HMS-permitted vessel owners that wish to fish under a chartering arrangement outside U.S. waters. The number of EFPs, display permits, and SRPs issued from 2010 – 2014 by category and species are listed in Table 8.9. Amendment 2 to the 2006 Consolidated HMS FMP implemented the shark research fishery. In 2014, NMFS received 11 applications for entrance into the shark research fishery. Based on the qualification criteria, 5 were chosen to participate.

Table 8.9 Number of Atlantic HMS Exempted Fishing Permits (EFPs), Display Permits, and Scientific Research Permits (SRPs) (2010-2014)

Permit Type		2010	2011	2012	2013	2014*
Exempted Fishing Permit	Sharks for display	2	3	4	4	3
	HMS** for display	2	2	2	2	3
	Tunas for display	0	0	0	0	0
	Shark research on a non-scientific vessel	9	8	10	10	10
	Tuna research on a non-scientific vessel	5	5	5	4	3
	HMS** research on a non-scientific vessel	2	2	3	3	3
	Billfish research on a non-scientific vessel	2	2	1	1	0
	Shark fishing	0	0	0	0	0
	HMS** chartering	0	0	0	0	0
	Tuna fishing	0	0	0	0	0
	Total	22	22	25	24	22
Scientific Research Permit	Shark research	1	3	4	3	2
	Tuna research	1	1	3	2	2
	Billfish research	0	0	0	0	0
	HMS** research	4	6	4	3	3
	Total	6	10	11	8	7
Letters of Acknowledgement	Shark research	8	7	7	6	8
	Total	8	7	7	6	8

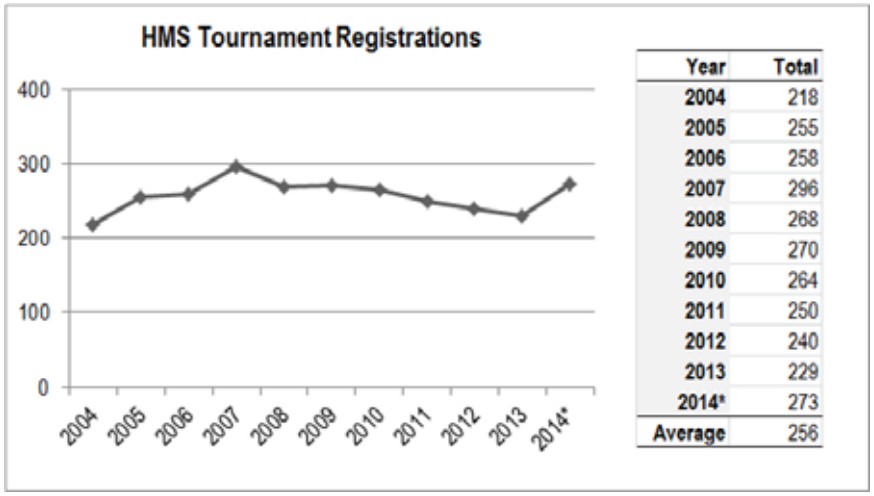
*As of October 31, 2014. **Multiple species.

8.2 Atlantic HMS Tournaments

An Atlantic HMS tournament is any fishing competition involving Atlantic HMS in which participants must register or otherwise enter or in which a prize or award is offered for catching or landing such fish. Atlantic HMS tournaments are conducted from ports along the U.S. Atlantic coast, Gulf of Mexico, and U.S. Caribbean. Some foreign tournaments (e.g., those held in the Bahamas, Bermuda, and the Turks and Caicos) may voluntarily register because their participants are mostly U.S. citizens. Since 1999, Federal regulations have required that tournament registration with NMFS take place at least four weeks prior to the commencement of tournament fishing activities. Tournament operators may be selected by NMFS for reporting, in which case a record of tournament catch and effort must be submitted to NMFS within seven days of the conclusion of the tournament. Tournament landings are presented in Section 4.4.2.

Atlantic HMS tournaments vary in size. They may range from relatively small, "members-only" club events with as few as ten participating boats (40 – 60 anglers) to larger, statewide tournaments with 250 or more participating vessels (1,000 – 1,500 anglers). Larger tournaments often involve corporate sponsorship from tackle manufacturers, marinas, boat dealers, marine suppliers, beverage distributors, resorts, radio stations, publications, chambers of commerce, restaurants, and other local businesses.

Tournament registration and reporting forms are available at http://www.nmfs.noaa.gov/sfa/hms/compliance/tournaments/. Tournament operators may also request HMS regulation booklets and other outreach materials (e.g., shark identification guides and careful catch and release brochures) to distribute to tournament participants. In 2013, more than 125 tournaments requested and received more than 10,400 copies of these materials from the HMS Management Division. The number of HMS tournaments that registered each year from 2004 to 2014 is reported in Figure 8.1. Since 2004, an average of 256 HMS tournaments have registered each year. The highest number of HMS tournament registrations occurred in 2007. In 2013, there were 16 inaugural HMS tournaments. The number of registered tournaments in 2014 is the highest since 2007, possibly due to increased outreach and compliance monitoring, and may also be influenced by an improving U.S. economy and lower fuel prices.



Year	Total
2004	218
2005	255
2006	258
2007	296
2008	268
2009	270
2010	264
2011	250
2012	240
2013	229
2014*	273
Average	256

Figure 8.1 Number of Registered Atlantic HMS Tournaments by Year (2004-2014)

*As of November 2014. Source: NMFS Atlantic HMS Tournament Registration Database.

The distribution of HMS fishing tournaments along the Atlantic and Gulf of Mexico coastal states and the Caribbean is represented in Figure 8.2.

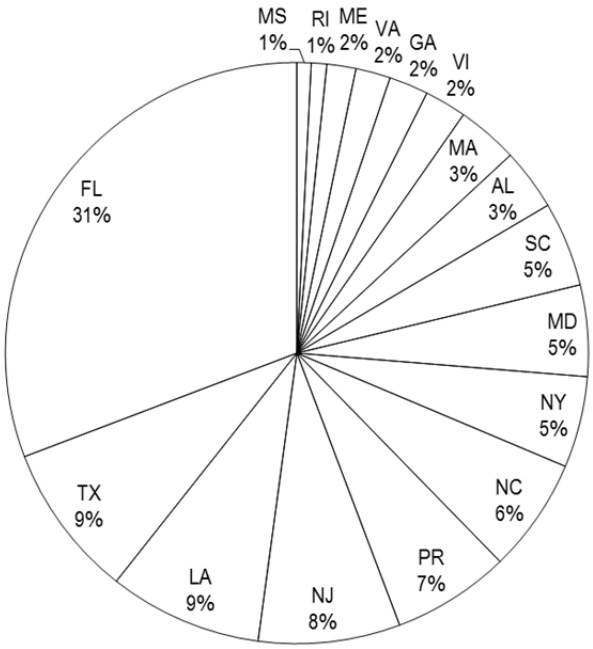


Figure 8.2 Percentage of Atlantic HMS Tournaments Held in each State (2004-2014)

Areas excluded (< 1%) are Bermuda (0.03%), Connecticut (0.1%), Delaware (0.2%), and the Bahamas (0.4%). Source: NMFS Atlantic HMS Tournament Registration Database.

Table 8.10 indicates the number of HMS tournaments in 2012 and 2013 that registered to award points or prizes for the catch or landing of each HMS. Figure 8.3 shows that sailfish, blue marlin, yellowfin tuna, and white marlin are the predominant target species in HMS fishing tournaments.

Table 8.10 Number of Atlantic HMS Tournaments per Species (2012 & 2013)

Species	2012	2013
Blue marlin	139	142
White marlin	124	128
Longbill spearfish	59	43
Roundscale spearfish	42	43
Sailfish	139	138
Swordfish	67	42
Bluefin tuna	78	36
Bigeye tuna	58	63
Albacore tuna	37	36
Yellowfin tuna	133	101
Skipjack tuna	33	30
Pelagic sharks	71	69
Small coastal sharks	16	16
Non-ridgeback sharks	15	16
Ridgeback sharks	13	11

Source: NMFS Atlantic HMS Tournament Registration Database.

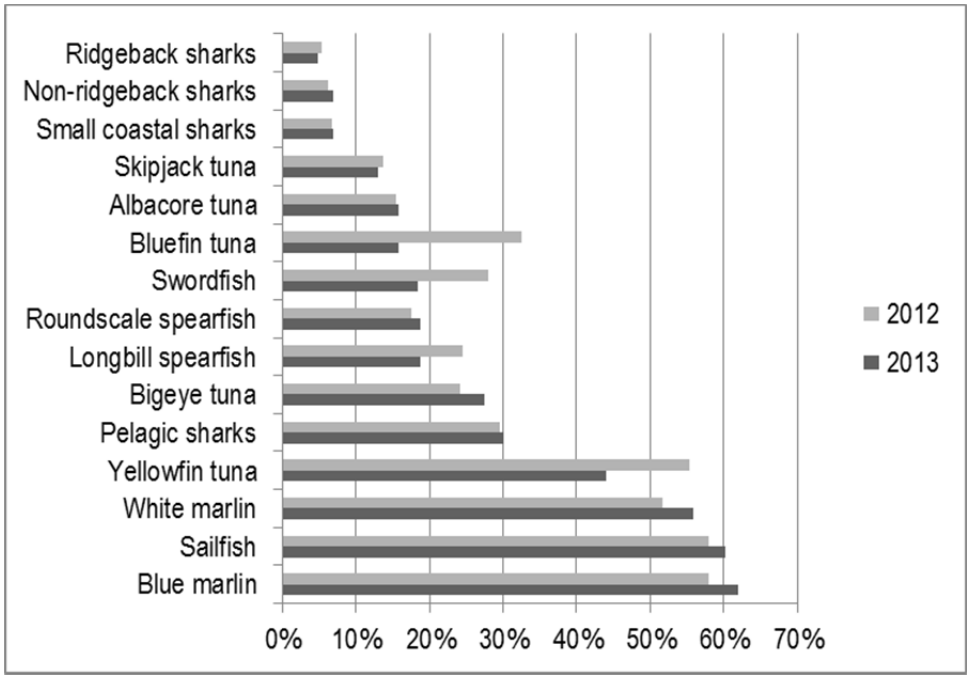


Figure 8.3 Percent of HMS Tournaments by Species (2012 & 2013)

Source: NMFS Atlantic HMS Tournament Registration Database.

Billfish Tournaments

A significant number of blue marlin, white marlin, and sailfish tournaments are "release-only," utilizing observers, angler affidavits, polygraph tests, photographs, or digital video camcorders to document the live release of billfish. All billfish tournaments are selected for reporting to the Recreational Billfish Survey (RBS), including numbers of released fish.

Anglers fishing from an HMS-permitted vessel in any tournament awarding points or prizes for Atlantic billfish are required to deploy only non-offset circle hooks when using natural bait or natural bait/artificial lure combinations. The use of non-offset circle hooks increases the likelihood of post-release survival for billfish.

Figure 8.4 depicts the time of year that billfish tournaments are most prevalent in regions of the U.S. Atlantic, Gulf of Mexico, and Caribbean. The majority of the billfish tournaments occurring in January are sailfish tournaments along the Atlantic coast of Florida.

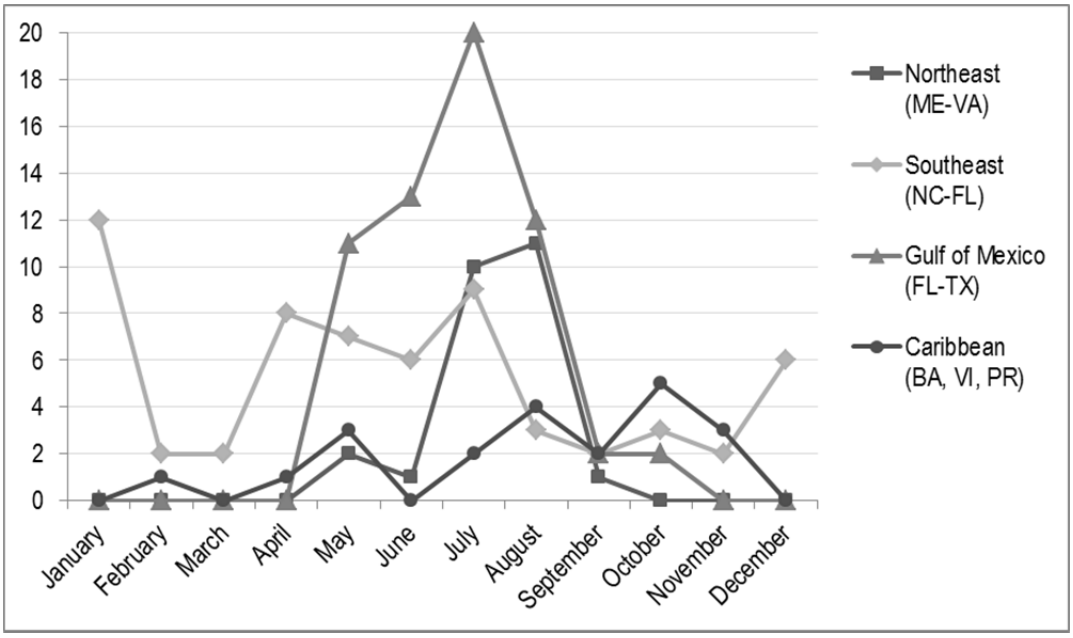


Figure 8.4 Number of Billfish Tournaments by Region and Month (2013)

Source: NMFS Atlantic HMS Tournament Registration Database.

Figure 8.5 shows the number of tournaments in 2013 that selected white marlin, blue marlin, sailfish, longbill spearfish, or roundscale spearfish as categories on the HMS tournament registration form. The figure illustrates that the Atlantic coast of Florida is the leading location for sailfish tournaments, and that white marlin and blue marlin tournaments occur in states all along the Atlantic and Gulf coasts, including the Caribbean.

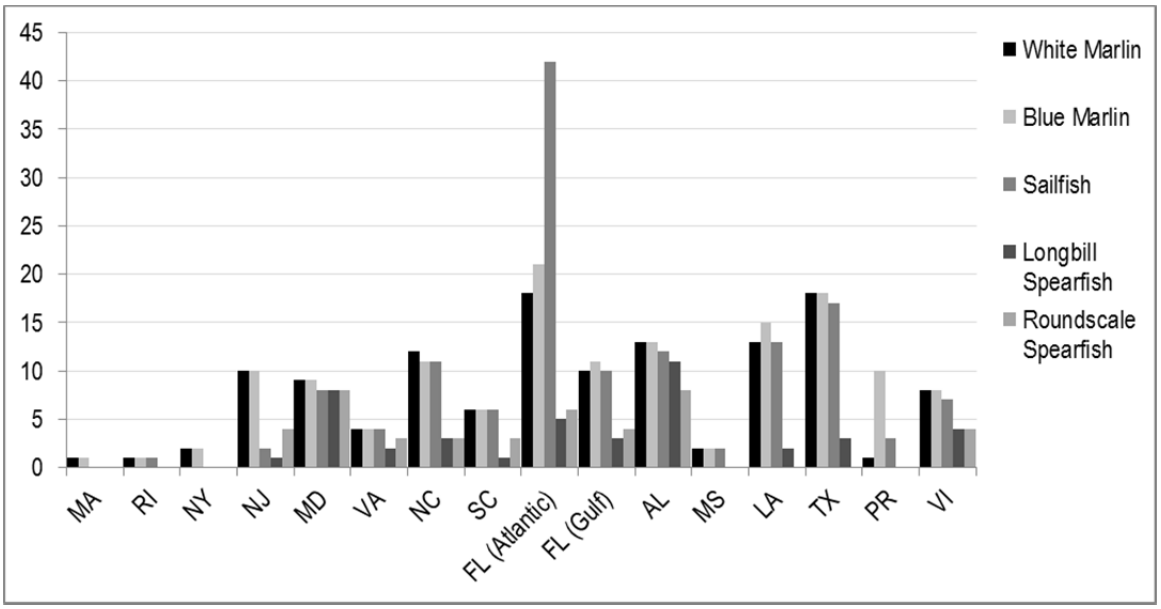


Figure 8.5 Number of White Marlin, Blue Marlin, Sailfish, Longbill Spearfish, and Roundscale Spearfish Tournaments by Species and State (2013)

Source: NMFS Atlantic HMS Tournament Registration Database.