

## CHAPTER 1 TABLE OF CONTENTS

<b>Chapter 1 Table of Contents</b> .....	<b>1-i</b>
<b>List of Tables</b> .....	<b>1-ii</b>
<b>1.0 Introduction</b> .....	<b>1-1</b>
1.1 Brief Management History .....	1-4
1.2 Rebuilding and Preventing Overfishing of Atlantic Sharks .....	1-5
1.3 Purpose and Need .....	1-15
1.3.1 Need .....	1-15
1.3.2 Purpose and Objectives.....	1-16
1.4 Other Considerations .....	1-16
<b>Literature Cited</b> .....	<b>1-19</b>

## LIST OF TABLES

Table 1.1	Sources of blacknose shark mortality, 1999-2005.....	1-13
-----------	--	------

## 1.0 INTRODUCTION

Atlantic Highly Migratory Species (HMS<sup>1</sup>) are managed under the dual authority of the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act (Magnuson-Stevens Act) and the Atlantic Tunas Convention Act (ATCA). Under the Magnuson-Stevens Act, the National Marine Fisheries Service (NMFS) must, consistent with the National Standards, manage fisheries to maintain optimum yield (OY) on a continuing basis while preventing overfishing. Under ATCA, NMFS is authorized to promulgate regulations, as may be necessary and appropriate, to implement the recommendations from the International Commission for the Conservation of Atlantic Tunas (ICCAT). The management measures proposed for this Fishery Management Plan (FMP) amendment and associated rulemaking, which address Atlantic sharks, are taken under the authority of the Magnuson-Stevens Act. In addition to the Magnuson-Stevens Act, any management measures must also be consistent with other applicable laws including, but not limited to, the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), the Marine Mammal Protection Act (MMPA), and the Coastal Zone Management Act (CZMA). This document is prepared, in part, to comply with NMFS' responsibilities under NEPA, as implemented by the regulations published by the Council on Environmental Quality, 50 C.F.R. Parts 1501-1508 (CEQ Regs), and NMFS Administrative Order 216-6 (NAO 216-6).

In accordance with the requirements of NEPA, NMFS announced its intent to prepare an Environmental Impact Statement (EIS) for Amendment 3 to the 2006 Atlantic Consolidated HMS FMP on May 7, 2008 (73 FR 25665). In that notice, NMFS announced that blacknose sharks (*Carcharhinus acronotus*) are overfished with overfishing occurring and asked for comments on existing commercial and recreational shark management measures that would assist the Agency in determining options for conservation and management of blacknose sharks consistent with relevant federal statutes. NMFS announced the availability of a scoping document and details of five scoping meetings that were held from July through September 2008 (73 FR 37932, July 2, 2008; 73 FR 53407, September 13, 2008). NMFS also released a scoping presentation in conjunction with the Federal Register notice. In the presentation and at scoping meetings, in addition to presenting options for management of blacknose sharks, NMFS described the results of recent stock assessments for small coastal sharks (SCS), issues that need to be addressed concerning shark management, and options or alternatives that may be implemented to achieve objectives. Specifically, NMFS noted that the amendment would consider potential issues and options for blacknose sharks, pelagic sharks, and smooth dogfish (*Mustelus canis*). At the time of the release of that presentation, the shortfin mako (*Isurus oxyrinchus*) and blue shark (*Prionace glauca*) stock assessments were not completed. As such, at the scoping meetings, NMFS did not present specific issues and options regarding shortfin mako sharks and blue sharks. Additionally, NMFS was just beginning to consider adding smooth dogfish under NMFS management and while NMFS presented the idea during scoping, specific issues and options for smooth dogfish were not identified at that time.

---

<sup>1</sup>The Magnuson-Stevens Act, at 16 U.S.C. 1802(14), defines the term "highly migratory species" as tuna species, marlin (*Tetrapturus* spp. and *Makaira* spp.), oceanic sharks, sailfishes (*Istiophorus* spp.), and swordfish (*Xiphias gladius*). Further, the Magnuson-Stevens Act, at 16 U.S.C. 1802(27), defines the term "tuna species" as albacore tuna (*Thunnus alalunga*), bigeye tuna (*Thunnus obesus*), bluefin tuna (*Thunnus thynnus*), skipjack tuna (*Katsuwonus pelamis*), and yellowfin tuna (*Thunnus albacares*).

NMFS released a Predraft of Amendment 3 to the 2006 Consolidated HMS FMP, which incorporated comments received during scoping, and a summary of the scoping comments to the HMS Advisory Panel (AP) on February 11, 2009, and was made available on the HMS website. The Predraft included, among other things, the outcome of the shortfin mako, blue shark, and SCS stock assessments as well as potential management measures for SCS, shortfin mako, smooth dogfish, and deepwater sharks. NMFS requested that the AP and consulting parties (Atlantic, Gulf, and Caribbean Fishery Management Councils, Marine Fisheries Commissions, U.S. Coast Guard, and other State and Federal Agency representatives) submit comments on the Predraft by March 16, 2009.

Based on comments received during scoping and on the Predraft, NMFS determined the significant issues of concern that would be addressed in this draft amendment. Some issues in the draft amendment are driven by statutory mandates under the Magnuson-Stevens Act, such as rebuilding overfished blacknose sharks and ending overfishing of blacknose and shortfin mako sharks. Other issues are being addressed due to concerns raised by constituents, such as implementing federal management for smooth dogfish. While some of the options considered in preparing this Predraft were modified in this draft amendment, the overall list of issues to be addressed has not changed. In this draft amendment, NMFS considers a range of alternatives for several different issues including quota limits, commercial gear restrictions, establishing a rebuilding plan for overfished stocks, recreational measures, and management measures for smooth dogfish. The specific issues are:

- SCS Commercial Quotas (alternatives A1-A5): NMFS considers modifying the SCS and species-specific quotas for SCS in order to rebuild blacknose sharks and end overfishing of this species. The range of alternatives could have a variety of impacts on the human environment from no impact (the No Action alternative) to significant impacts (alternative A5). The preferred alternative, A4, would likely have significant impacts on the human environment;
- Commercial Gear Restrictions (alternatives B1-B3): NMFS considers modifying the authorized gears that can be used to retain sharks in order to rebuild blacknose sharks and end overfishing of this species. The range of alternatives could have a variety of impacts on the human environment from no impact (the No Action alternative) to significant impacts (alternative B2). The preferred alternative, B3, would likely have significant impacts on the human environment;
- Commercial Pelagic Shark Effort Controls (alternatives C1-C6); NMFS considers modifying commercial regulations for shortfin mako sharks to end overfishing of this species. The range of alternatives could have a variety of impacts on the human environment from no impact (the No Action alternative) to significant impacts (alternative C3). The preferred alternatives, C5 and C6, would likely have minor impacts on the human environment;
- Recreational SCS Measures (alternatives D1-D4): NMFS considers modifying recreational regulations for SCS, including blacknose shark and Atlantic sharpnose sharks, to rebuild blacknose sharks and end overfishing of this species. The range of alternatives could have a variety of impacts on the human environment from no impact

(the No Action alternative) to moderate impacts (alternative D4). The preferred alternative, D4, would likely have moderate impacts on the human environment;

- Recreational Pelagic Shark Measures (alternatives E1-E5); NMFS considers modifying recreational regulations for shortfin mako sharks to end overfishing of this species. The range of alternatives could have a variety of impacts on the human environment from no impact (the No Action alternative) to significant impacts (alternative E5). The preferred alternatives, E3 and E4, would likely have minor impacts on the human environment; and,
- Smooth Dogfish Measures (alternatives F1-F3); NMFS considers implementing federal management measures for smooth dogfish based on concerns from constituents that smooth dogfish may require conservation and management. The range of alternatives could have a variety of impacts on the human environment from no impact (the No Action alternative) to moderate impacts (alternative F2 and sub-alternative F2a1). The preferred alternative, F2, and sub-alternatives F2a3 and F2b1, would likely have minor impacts on the human environment.

The Magnuson-Stevens Act subsection 303(a)(9) requires any FMP to include a fishery impact statement which shall assess, specify, and analyze the likely effects, if any, including the cumulative conservation, economic, and social impacts, of the conservation and management measures on, and possible mitigation measures for:

- Participants in the fisheries and fishing communities affected by the plan or amendment;
- Participants in the fisheries conducted in adjacent areas under the authority of another Council, after consultation with such Council and representatives of those participants; and,
- The safety of human life at sea, including whether and to what extent such measure may affect the safety of participants in the fishery.

A similar analysis using much of the same economic and social data is necessary to ensure consistency with of the Magnuson-Stevens Act National Standard 8, which requires that conservation and management measures, including those developed to end overfishing and rebuild fisheries:

- Take into account the importance of fishery resources to fishing communities in order to provide for their sustained participation; and,
- To the extent practicable, minimize the adverse economic impacts on such communities.

The mandates of subsections 303(a)(9) and 301(a)(8) are consistent with the requirements under NEPA for NMFS to identify and evaluate the direct, indirect and cumulative impacts of the proposed action on the social and economic elements of the human environment. This amendment, therefore, meets these multiple requirements with an integrated analysis focusing on the existing social and economic condition of the fisheries and affected fishing communities, determining the potential direct, indirect, and cumulative effects, and developing alternatives to mitigate adverse effects to the greatest extent practicable. The data and analyses necessary to support the foregoing requirements can be found in the following chapters. Chapter 3 provides a description of the fisheries that interact with blacknose, shortfin mako, and smooth dogfish

sharks and participants in the fisheries conducted in adjacent areas under the authority of another Council. Chapter 3 also describes safety of human life at sea issues. Chapter 4 of this document provides the ecological, socio-economic impacts, and cumulative impacts of the conservation and management measures on participants in the fisheries and fishing communities affected by this amendment. Finally, Chapter 5 discusses any mitigating measures regarding the preferred alternatives, and Chapter 9 provides the community profiles and social impact analysis for this amendment. This amendment also includes Chapter 2, which gives a description of the different alternatives for each issue, and Chapters 6, 7, and 8, which analyze the economic impacts of the alternatives and address the requirements of a Regulatory Impact Review (RIR) and Initial Regulatory Flexibility Analysis (IRFA). Chapter 10 describes consistency with the National Standards, other requirements of the Magnuson-Stevens Act, and other applicable laws, and Chapter 11 describes essential fish habitat for smooth dogfish. Several appendices are also included to provide more information on specific calculations for different issues (Appendix A), a response by the NMFS Southeast Fisheries Science Center (SEFSC) on technical comments received during scoping (Appendix B), and a formal response to the Mid-Atlantic Fishery Management Council regarding smooth dogfish management (Appendix C).

## **1.1 Brief Management History**

This section provides a brief overview of HMS management. More detail regarding the history of Atlantic shark management can be found in Section 3.1.

In 1989, the Regional Fishery Management Councils (RFMCs) requested that the Secretary of Commerce (Secretary) manage Atlantic sharks. On November 28, 1990, the President of the United States signed into law the Fishery Conservation Amendments of 1990 (Pub. L. 101-627). This law amended the Magnuson Fishery Conservation and Management Act (later renamed the Magnuson-Stevens Fishery Conservation and Management Act or Magnuson-Stevens Act) and gave the Secretary the authority (effective January 1, 1992) to manage HMS in the exclusive economic zone (EEZ) of the Atlantic Ocean, Gulf of Mexico, and Caribbean Sea under authority of the Magnuson-Stevens Act (16 U.S.C. §1811). This law also transferred from the Fishery Management Councils to the Secretary, effective November 28, 1990, the management authority for HMS in the Atlantic Ocean, Gulf of Mexico, and Caribbean Sea (16 U.S.C. §1854(f)(3)). At this time, the Secretary delegated authority to manage Atlantic HMS to NMFS. NMFS finalized a shark FMP in 1993. In 1999, NMFS revised the 1993 FMP and included swordfish and tunas in the 1999 FMP for Atlantic tunas, swordfish, and sharks (1999 FMP). The 1999 FMP was amended in 2003, and in 2006, NMFS consolidated the Atlantic tunas, swordfish, and shark FMP and its amendments and the Atlantic billfish FMP and its amendments in the 2006 Consolidated Atlantic HMS FMP. This amendment amends the 2006 Consolidated HMS FMP.

Under the Magnuson-Stevens Act, NMFS is responsible for managing HMS and must comply with all applicable provisions of the Magnuson-Stevens Act when it prepares and amends its FMP and implementing regulations (16 U.S.C. §1852(a)(3)). NMFS must maintain OY of each fishery while preventing overfishing (16 U.S.C. §1851(a)(1)). Where a fishery is determined to be in or approaching an overfished condition, NMFS must include in its FMP conservation and management measures to prevent or end overfishing and rebuilding the fishery, stock or species (16 U.S.C. §§1853(a)(10); 1854(e)). If NMFS determines that a fishery is

overfished or approaching an overfished condition due to excessive international fishing pressure and there are no management measures to end such overfishing in an international agreement to which the United States is a party, it must take action at the international level to end overfishing (16 U.S.C. §§1854, 1854 note). In preparing and amending an FMP, NMFS must, among other things, consider the National Standards, including using the best scientific information as well as the potential impacts on residents of different States, efficiency, costs, fishing communities, bycatch, and safety at sea (16 U.S.C. §1851 (a)(1-10)). The Magnuson-Stevens Act also has a specific section that addresses preparing and implementing FMPs for Atlantic HMS (16 U.S.C. §1854 (g)(1)(A-G)). In summary, the section includes, but is not limited to, requirements to:

- Consult with and consider the views of affected Councils, Commissions, and advisory groups;
- Evaluate the likely effects of conservation and management measures on participants and minimize, to the extent practicable, any disadvantage to U.S. fishermen in relation to foreign competitors;
- Provide fishing vessels with a reasonable opportunity to harvest any allocation or quota authorized under an international fishery agreement;
- Diligently pursue comparable international fishery management measures; and,
- Ensure that conservation and management measures promote international conservation of the affected fishery, take into consideration traditional fishing patterns of fishing vessels, are fair and equitable in allocating fishing privileges among U.S. fishermen and do not have economic allocation as the sole purpose, and promote, to the extent practicable, implementation of scientific research programs that include the tagging and release of Atlantic HMS.

## **1.2 Rebuilding and Preventing Overfishing of Atlantic Sharks**

Under National Standard (NS) 1 of the Magnuson-Stevens Act, as implemented by the National Standard 1 Guidelines (NSG1) (50 CFR 600.310), NMFS is required to “prevent overfishing while achieving, on a continuing basis, the OY from each fishery for the U.S. fishing industry.” In order to accomplish this, NMFS must determine the maximum sustainable yield (MSY) and specify status determination criteria (*i.e.*, maximum fishing mortality threshold and minimum stock size threshold) to allow a determination of the status of the stock. In cases where the fishery is overfished, NMFS must take action to rebuild the stock (by specifying rebuilding targets). In the 1999 FMP, and maintained in the 2006 Consolidated HMS FMP, NMFS outlined these status determination criteria and a set of rebuilding targets for all HMS. As described below, this amendment does not change these criteria or targets. In addition, Congress amended the Magnuson-Stevens Act in 2007 to require that each FMP establish a mechanism for specifying Annual Catch Limits (ACLs) at a level that will prevent overfishing and include Accountability Measures (AMs) to ensure ACLs are not exceeded (16 U.S.C. 1853(a)(15)). NMFS must amend its HMS FMP to address these requirements for stocks currently experiencing overfishing by 2010, and for all other stocks beginning 2011 onward. This document will amend the plan to include a mechanism to specify ACLs for stock complexes and certain specific shark species. It will also identify AMs. The regulations necessary to adjust ACLs as needed and apply AMs already exist. No additional regulations would be necessary to implement these requirements.

On January 16, 2009, NMFS published NSG1 providing guidance for implementing the ACL and AM requirements of the Magnuson-Stevens Act (74 FR 3178). Per the January 2009 final rule, ACLs and AMs apply to all fisheries “unless otherwise provided for under an international agreement in which the United States participates.” While, SCS, large coastal sharks (LCS), and pelagic sharks are predominately managed through domestic management measures, in recent years ICCAT has issued a number of recommendations regarding sharks (e.g., ICCAT recommendations 2004-10, 2005-05, 2007-06, and 2008-07. Nevertheless, ACLs and AMs will apply, as required, to all Atlantic shark species managed by NMFS.

According to the NSG1, ACLs and AMs are related to other reference points, including an overfishing limit (OFL) and Allowable Biological Catch (ABC). OFL is greater than or equal to the ABC limit, which is greater than or equal to the ACL. As such, NMFS is establishing for all Atlantic sharks the following mechanism to use when establishing ACLs and applying AMs. NMFS considers the OFL to be the annual amount of catch that corresponds to the estimate of maximum fishing mortality threshold (MFMT) applied to the stock abundance. The ABC would be established to account for uncertainty in the assessment. Ideally, the actual ABC would be established as part of the stock assessment reports, results, and/or conclusions. However, because the SCS assessment predates NSG1 and until new stock assessments for HMS incorporate the new ACL and AM guidance, for sharks, NMFS is establishing the ABC equal to the ACL. This would ensure that the ABC is below the OFL, which is required under NSG1.

In general, the ACL is equivalent to the total allowable catch (TAC) for all fisheries that interact with a given shark species. The TAC, or ACL, is provided as part of the stock assessment report, results, and/or conclusions and is the level of mortality that is acceptable given the biological characteristics of the species that would allow a stock to rebuild or remain sustainable during a given timeframe. If the OFL can be estimated, then the ABC and corresponding ACL would be set at a level of catch less than the OFL to account for scientific uncertainty and at a level that is acceptable given the biological characteristics of the species. Future stock assessments would provide an ABC consistent with the NSG1. For overfished stocks, the ACL is equal to the stock assessment’s projection that shows rebuilding with a 70-percent change of success. NMFS uses the 70 percent probability of rebuilding for sharks given their life history traits, such as late age of maturity and low fecundity (*i.e.*, instead of 50 percent, which is commonly used for other species). Additionally, NMFS may establish “sector-ACLs,” which would include landings and discards, and “commercial landings components of the sector ACL,” which would be the commercial landings quota for specific shark fisheries.

A number of shark stocks have not been individually assessed. Additionally, a number of shark stocks are managed in a complex as some species have not been individually assessed, such as oceanic whitetip and common thresher sharks. As such, NMFS is establishing some exceptions to the above mechanism for establishing ACLs and AMs. For example, MSY, OY, and the status determination criteria for pelagic sharks have been defined in the 1999 FMP (see below) and do not change in this amendment. Additionally, quotas have been established for the pelagic shark complex and for blue and porbeagle sharks. For example, the original pelagic shark quota (which was comprised of common thresher, oceanic whitetip, blue, shortfin mako, and porbeagle sharks) was based on mean landings from 1986-1991 (580 mt dw). In the 1999 FMP, the current pelagic quota was established by subtracting the porbeagle quota of 92 mt dw

from the pelagic sharks quota, resulting in an annual quota of 488 mt dw (a separate set-aside was also established for blue shark discards under the 1999 FMP). The porbeagle quota has since been reduced to 1.7 mt dw per year, and a TAC has been established at 11.3 mt dw, which would be equivalent to the ACL for porbeagle sharks. NMFS believes that these levels of catch for pelagic sharks are acceptable given the biological characteristics of the stocks or stock complex. As such, given that the current commercial quotas and recreational bag limits serve as limits on catch and prevent overfishing, in the absence of a specific TAC, NMFS considers these quotas to be equivalent to the ACL, ABC, and TAC for pelagic sharks. As needed and required, NMFS can adjust these ACLs and apply AMs.

For sharks, the quotas are generally for the commercial fishery, not the recreational fishery. NMFS has not established quotas for the recreational shark fishery due to the difficulty in estimating recreational catches in real time but may consider doing so in the future. While the shark recreational fishery does not have a formal quota, catches within the recreational shark fishery are considered when stock assessments are conducted and are taken into account when NMFS establishes the OFL, ABC, ACL, and TAC. NMFS also takes the recreational catches, along with discards from the commercial sector, into account when establishing the commercial quota or “commercial landings components of the ACL.” Because sector ACLs are being used, sector AMs would also be used. This action would change the quotas for SCS and establish a commercial quota for smooth dogfish. It does not change the quotas that were previously established for LCS and pelagic sharks.

NSG1 also requires NMFS to establish AMs. NMFS already has AMs along with measures analogous to allowable catch targets (ACTs) in place in commercial Atlantic shark fisheries. Specifically, overharvests of the commercial quotas are removed from the next fishing year’s quota. In addition, underharvests for shark species that are not overfished or are not experiencing overfishing are added to the base quota the following year and capped at 50 percent of the base quota. There is no carryover of underharvests for species that are unknown, overfished, or experiencing overfishing. In addition, NMFS closes the quota for each shark species/complex with five days notice upon filing in the Federal Register when 80 percent of a given quota is filled or projected to be reached. Eighty percent of the shark quota is, therefore, the ACT. The measures proposed in draft Amendment 3 to the Consolidated HMS FMP do not change these AMs.

In summary, this proposed amendment and associated rulemaking establishes the mechanism for specifying ACLs as required by Section 303(a)(15) of the statute and is consistent, to the greatest extent practicable with NSG1; establishes new quotas for SCS and smooth dogfish following these methods; and maintains the current quotas for LCS and pelagic sharks, consistent with these methods. Quotas, or landings component of the sector ACL, would be adjusted annually for over- and underharvests from the previous fishing year. ACLs are adjusted based on the result of stock assessments, which are usually done through a FMP amendment. In short, for all HMS managed sharks, with the exceptions noted above, the methods are:

- $OFL > ABC \geq ACL$  (until estimates of ABC are available);

- OFL = the annual amount of catch that corresponds to the estimate of MFMT applied to a stock's abundance relative to the level of fishing mortality (F);
- ABC = to be determined by future stock assessments; in the interim, NMFS assumes ABC=ACL;
- ACL = TAC; for overfished stocks this will be the projection that shows 70 percent probability of rebuilding;
- Commercial quota = landings component of the sector ACL; and
- AMs = restrictions on use of over- and underharvests and closing the fishery when commercial landings are at or projected to be at 80 percent of the quota.

### *Stock Status and Status Determination Criteria*

According to the definition in 50 C.F.R. § 600.310(e)(2)(i)(B) of NSG1, overfishing occurs whenever a stock or stock complex is subjected to a level of fishing mortality or annual total catch that jeopardizes the capacity of a stock or stock complex to produce MSY on a continuing basis. The 1999 FMP established the maximum fishing mortality threshold (MFMT) as  $F_{MSY}$ .  $F_{MSY}$  is defined as the fishing mortality level necessary to produce MSY on a continuing basis. If the MFMT exceeds  $F_{MSY}$  for more than one year, then the stock is considered to be subject to overfishing, and remedial action must be taken. This is the current situation for blacknose and shortfin mako sharks.

The 1999 FMP established the minimum stock size threshold (MSST) as  $(1-M)B_{MSY}$  when natural mortality (M) is less than 0.5. Most species of sharks have M less than 0.5. When the stock falls below MSST, the stock is overfished and remedial action must be taken to rebuild the stock. This is the current situation for blacknose sharks.

Stocks are considered rebuilt when current B levels are equal to  $B_{MSY}$ .  $B_{MSY}$  is the level of stock abundance at which harvesting the resource can be sustained on a continual basis at the level necessary to support MSY. Stocks are considered healthy when F is less than or equal to  $0.75 F_{MSY}$  and B is greater than or equal to  $B_{OY}$  (the biomass level necessary to produce OY on a continuing basis). Finetooth (*Carcharhinus isodon*), bonnethead (*Sphyrna tiburo*), Atlantic sharpnose (*Rhizoprionodon terraenovae*), and blue sharks are considered healthy; however, the 2007 assessments for finetooth, bonnethead, and Atlantic sharpnose sharks recommended cautious management measures for these three species based on trends of  $B_{MSY}$  and  $F_{MSY}$  for all species (NMFS, 2007). In summary, the thresholds used to calculate the status of Atlantic sharks are as follows:

- $MFMT = F_{limit} = F_{MSY}$ ;
- Overfishing is occurring when  $F_{year} > F_{MSY}$ ;
- $MSST = B_{limit} = (1-M)B_{MSY}$  when  $M < 0.5 = 0.5B_{MSY}$  when  $M \geq 0.5$ ;
- 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 =  $B_{OY} = \sim 1.25$  to  $1.30B_{MSY}$ ;
- Minimum biomass flag =  $(1-M)B_{OY}$ ; and
- Level of certainty of *at least* 50 percent but depends on species and circumstances; for sharks, the level of certainty is 70 percent.
- For sharks, in some cases, spawning stock fecundity (SSF) or spawning stock number (SSN) is used as a proxy for biomass since biomass does not influence pup production in sharks.

The latest stock assessment of SCS in the U.S. Atlantic and Gulf of Mexico was completed in 2007 (72 FR 63888, November 13, 2007). This peer-reviewed assessment, which was conducted according to the Southeast Data, Assessment, and Review (SEDAR) process, provides an update from the 2002 stock assessment on the status of SCS stocks and projects their future abundance under a variety of catch levels in the U.S. Atlantic Ocean, Gulf of Mexico, and Caribbean Sea. The 2007 assessment includes updated catch estimates, new biological data, and a number of fishery-independent catch rate series, as well as fishery-dependent catch rate series, and is considered the best available science.

The peer reviewers determined that the data used in the 2007 stock assessment of the SCS complex and the individual species within the complex were the best available at the time, and the assessment was considered adequate. However, because the species were individually assessed, the peer reviewers recommended using species-specific results rather than the aggregated SCS complex results. This does not preclude NMFS from managing SCS as a complex. Therefore, NMFS is examining alternative options to managing the SCS complex as a whole as well as species-specific management for blacknose sharks, which are described in more detail in Chapters 2 and 4.

In addition, the NMFS SEFSC has been working with industry scientists to re-evaluate the shrimp bycatch models used in the 2007 SCS stock assessments. In particular, they have been evaluating the effect of turtle exclusion devices, or TEDs, on SCS bycatch in shrimp trawls. Once the SEFSC has finished their evaluation of those models, NMFS could revise blacknose shark bycatch estimates. Preliminary results suggest that the post-TED (*i.e.*, from 1990 on) reduction in bycatch from the model currently in development is approximately 50 percent. The NMFS SEFSC has also run sensitivity analyses to determine the effect of reduced blacknose bycatch in shrimp trawls on the stock status of blacknose sharks. Although stock status improves, despite reductions in shrimp trawl bycatch of 25, 50, and 75 percent, the stock continues to be overfished ( $N_{2005}/N_{MSY} = 0.66$  to  $0.74$  versus  $0.48$  in the baseline assessment run from the 2007 blacknose shark stock assessment) with overfishing occurring ( $F_{2005}/F_{MSY} = 2.67$  to  $2.21$  versus  $3.77$  in the baseline assessment run from the 2007 blacknose shark stock assessment) (see Appendix B). Depending on the results of these evaluations, NMFS may need to work with the Councils to reduce bycatch of blacknose sharks in shrimp trawls, as appropriate.

In 2008, the ICCAT's Standing Committee on Research and Statistics (SCRS) conducted an updated species-specific stock assessment for North Atlantic shortfin mako sharks. The

ICCAT stock assessment found that the North Atlantic shortfin mako sharks are experiencing overfishing and are not overfished but are approaching an overfished status; however, the assessment gave no biological benchmarks in terms of a TAC (or ACL) or ABC. NMFS has determined that the ICCAT assessment is the best available science and has determined domestically that shortfin mako sharks have overfishing occurring but are not overfished (June 19, 2009, 74 FR 21985). Based on this determination, NMFS is considering a range of alternatives to help stop overfishing of shortfin mako sharks and rebuilding the stock, if necessary, through efforts at the international level. These alternatives are described in more detail in Chapter 2 and 4.

### *National Standard 1 and Determining the Rebuilding Timeframe*

Under the NSG1, if a stock is overfished, NMFS is required to “prepare an FMP, FMP amendment, or proposed regulations... to specify a time period for ending overfishing and rebuilding the stock or stock complex that will be as short as possible as described under section 304(e)(4) of the Magnuson- Stevens Act.” (50 CFR 600.310(j)(2)(ii)). A rebuilding ABC must be set to reflect the annual catch that is consistent with the schedule of the fishing mortality rates in the rebuilding plan. The time frame to rebuild the stock or stock complex must specify a time period that is as short as possible taking into account a number of factors including:

- The status and biology of the stock or stock complex;
- Interactions between the stock or stock complex and other components of the marine ecosystem;
- The needs of the fishing communities;
- Recommendations by international organizations in which the United States participates; and
- Management measures under an international agreement in which the United States participates.

The rebuilding target may not exceed ten years, unless dictated otherwise by:

- The biology of the stock or complex of fish;
- Other environmental conditions; or,
- Management measures under an international agreement in which the United States participates.

The lower limit of the specified time frame for rebuilding is determined by the status and biology of the stock and is defined as “...the amount of time the stock or stock complex is expected to take to rebuild to its MSY biomass level in the absence of any fishing mortality” (50 CFR 600.310 (j)(3)(i)(A)).

The NSG1 specify two strategies for determining the rebuilding time frame depending on the lower limit of the specified time frame for rebuilding. The first strategy (50 CFR 600.310 (j)(3)(i)(C)) states that:

“If  $T_{\min}$  [minimum time for rebuilding a stock] for the stock or stock complex is 10 years or less, then the maximum time allowable for rebuilding ( $T_{\max}$ ) that stock to its  $B_{\text{MSY}}$  is 10 years.”

The second strategy (50 CFR 600.310 (j)(3)(i)(D)), which is applicable for most species of sharks because the lower limit is generally 10 years or greater, specifies that:

“If  $T_{\min}$  for the stock or stock complex exceeds 10 years, then the maximum time allowable for rebuilding a stock or stock complex to its  $B_{\text{MSY}}$  is  $T_{\min}$  plus the length of time associated with one generation time for that stock or stock complex. ‘Generation time’ is the average length of time between when an individual is born and the birth of its offspring.”

The 1999 FMP established that management measures for Atlantic tunas, swordfish, and sharks should have at least a 50 percent chance of reaching the target reference points used in developing rebuilding projections. This target is consistent with the technical guidelines for NSG1. However, compared to other HMS and fish species, many shark species are slow growing, take a long time to mature, have few pups, and generally reproduce every two or three years (*e.g.*, the blacknose shark has an average of three pups every year in the Gulf of Mexico region and three pups every other year in the South Atlantic region). Due to these life history traits, many shark species have a low reproductive potential. Thus, as described in past FMPs regarding sharks, NMFS uses a 70-percent probability to determine the rebuilding plan for sharks to ensure that the intended results are actually realized.

#### *2007 Stock Assessment and Rebuilding Timeframe for Blacknose Sharks*

The 2007 stock assessment of SCS in the U.S. Atlantic and Gulf of Mexico consisted of assessments for blacknose sharks, finetooth sharks, bonnethead sharks, Atlantic sharpnose sharks, and the SCS complex. Results of the blacknose shark stock assessment determined that blacknose sharks are overfished ( $\text{Spawning Stock Fecundity (SSF)}_{2005} / \text{SSF}_{\text{MSY}} = 0.48$ ) and overfishing is occurring ( $F_{2005}/F_{\text{MSY}} = 3.77$ ). The assessment recommended a blacknose shark specific TAC and a corresponding rebuilding timeframe. Because a separate TAC was recommended for blacknose sharks, NMFS is creating a separate rebuilding plan for blacknose sharks in this amendment. One objective of this amendment is to ensure that fishing mortality levels for blacknose sharks are maintained at or below levels that would result in a 70 percent probability of rebuilding in the timeframe recommended by the assessment.

The stock assessment discussed three rebuilding scenarios, including: 1) rebuilding timeframe under no fishing, 2) a TAC corresponding to a 50 percent probability of rebuilding, and 3) a TAC corresponding to a 70 percent probability of rebuilding. Under no fishing, the stock assessment estimated that blacknose sharks would rebuild in 11 years. Adding a generation time (8 years), as described under NS1 for species that require more than 10 years to rebuild even if fishing mortality were eliminated entirely, the target year for rebuilding the stock was estimated to be 2027 (8 years mean generation time + 11 years to rebuild if fishing mortality eliminated = 19 years including 2009). Since the assessment did not have estimates of fishing mortality for 2006 and beyond at the time of the assessment, NMFS assumed that fishing mortality in 2006 was the same as in 2005 and declined by 50 percent from 2005 levels in 2007-

2009 (to account for presumed reduction in effort due to Hurricane Katrina). NMFS determined that a constant TAC, or ACL (*i.e.*, ACL for all fisheries that interact with blacknose sharks), of 19,200 blacknose sharks per year would lead to rebuilding with a 70 percent probability by 2027. This is the shortest possible time necessary to rebuild the species as dictated by the species biology described above. Rebuilding with this same TAC would occur with a 50 percent probability by 2024. As described previously, NMFS is using the 70 percent probability of rebuilding to ensure that the intended results of a management action are actually realized given the life history traits of sharks.

According to the latest blacknose shark stock assessment, an average of 86,381 blacknose sharks were killed each year between 1999-2005 in different fisheries either as targeted catch or as bycatch (column H in Table 1.1). In order to attain the recommended blacknose shark TAC of 19,200, NMFS needs to reduce blacknose shark mortality by at least 78 percent ( $(86,381 - 19,200) / 86,381 \times 100$  percent = 78 percent). Table 1.1 shows that based on data used in the 2007 blacknose shark stock assessment, approximately 45 percent of blacknose mortality occurs as bycatch in the Gulf of Mexico shrimp trawl fishery based on average mortality between 1999 and 2005 (Table 1.1), and the rest of the mortality occurs within the South Atlantic shrimp trawl fishery and the Atlantic commercial and recreational shark fisheries. Additional information on SCS and blacknose bycatch in the shrimp trawl fishery can be found in Chapter 3 in Section 3.4.10. However, since the Gulf of Mexico and South Atlantic Councils manage the shrimp trawl fisheries, NMFS is implementing measures in this amendment to reduce the landings and discards in only the Atlantic shark fisheries. NMFS will continue to work with the Gulf of Mexico and South Atlantic Fishery Management Councils to establish bycatch reduction methods, as appropriate, to reduce mortality in the shrimp trawl fisheries. Changes in the shrimp trawl fisheries in the South Atlantic and Gulf of Mexico regions would be done through the Council-process in those regions. NMFS will also work to reduce mortality of blacknose sharks in Atlantic shark fisheries through the implementation of management measures, as analyzed in this document.

In order to attain the needed mortality reductions within the Atlantic shark fisheries, NMFS would establish a commercial allowance for the Atlantic shark commercial fishery (or a sector-ACL). This commercial allowance would result in at least a 78-percent reduction in mortality shown in Table 1.1. The average annual commercial landings of blacknose sharks within the Atlantic shark fisheries from 1999-2005 was 27,484 blacknose sharks (columns A+B+C in Table 1.1), and average annual discards were 5,007 blacknose sharks over that time period (column D in Table 1.1). A 78-percent reduction in blacknose commercial landings would result in 6,046 blacknose sharks being commercially landed ( $27,484 \times 78$  percent = 21,438 blacknose sharks;  $27,484 - 21,438 = 6,046$  blacknose sharks/year). Similarly, a 78 percent reduction in discards would result in blacknose shark discards of 1,102 sharks each year ( $5,007 \times 78$  percent = 3,905 blacknose sharks;  $5,007 - 3,905 = 1,102$  blacknose sharks/year). This would result in a total of 7,148 blacknose sharks taken per year ( $6,046 + 1,102 = 7,148$ ) in the Atlantic shark fisheries, which is equivalent to 45,032 lb (pounds) dw (dressed weight) (34 mt [metric tons] dw), assuming the average commercial blacknose weight across all commercial gears is 6.3 lb dw ( $7,148$  blacknose sharks  $\times$  6.3 lb dw = 45,032 lb dw). In addition, on average, 54 blacknose sharks are taken (*i.e.*, kept or discarded dead) under the exempted fishing program. Given the average weight of blacknose sharks taken under the exempted fishing program is 3.3

lb dw, this equals approximately 178.2 lb dw of blacknose sharks taken under the exempted fishing program. Thus, no more than 44,853.8 lb dw (20.3 mt dw) (45,032 lb dw - 178.2 lb dw = 44,853.8 lb dw) or 7,094 blacknose sharks (7,148 blacknose sharks – 54 blacknose sharks taken in the EFP program = 7,094 blacknose sharks) could be taken by the Atlantic shark commercial fishery.

In addition, on average, the recreational fishery landed 10,408 blacknose sharks per year. A 78-percent reduction in recreational landings would result in 2,290 blacknose sharks landed per year (10,408 x 78 percent = 8,118 blacknose sharks; 10,408-8,118= 2,290 blacknose sharks). This results in an overall allowance of 9,384 blacknose sharks per year in all HMS fisheries (7,094 commercial blacknose sharks + 2,290 recreational blacknose sharks = 9,384 blacknose sharks for the Atlantic shark fisheries).

Measures considered for blacknose sharks in this amendment include removing blacknose sharks from the SCS quota, reducing commercial quotas of blacknose sharks and non-blacknose SCS (*i.e.*, finetooth, Atlantic sharpnose, and finetooth sharks), removing gillnet gear, and prohibiting the landing of blacknose sharks in the recreational fishery. Such measures are necessary to ensure that the rebuilding timeframe of 2027 is met for blacknose sharks with a 70 percent probability of success.

**Table 1.1 Sources of blacknose shark mortality, 1999-2005.**

Source: NMFS, 2007. Estimates from the ‘longline’, ‘nets’, and ‘lines’ columns are derived from data reported in the Northeast and Southeast General Canvass data systems. Longline discards are derived from multiplying the longline landings by the ratio of dead discards observed in the commercial shark bottom longline fishery. The numbers in the shrimp bycatch columns are derived using a Bayesian model (Nichols, 2007).

A. Longline (number)	B. Nets (number)	C. Lines (number)	D. Bottom Longline Discards (number)	E. GOM Shrimp bycatch (number)	F. SA Shrimp bycatch (number)	G. Recreational Landings (number)	H. Total
8,091	19,041	352	5,007	38,626	4,856	10,408	86,381
9%	22%	<1%	6%	45%	6%	12%	100%

### *Smooth Dogfish*

Smooth dogfish sharks are not currently managed at the federal level; however, NMFS is proposing adding smooth dogfish under NMFS management, establishing a commercial quota for this species, and implementing federal permitting requirements. Any management measures implemented for smooth dogfish would also apply to Florida smoothhounds (*Mustelus norrisi*). Emerging molecular and morphological research has determined that Florida smoothhounds have been misclassified as a separate species from smooth dogfish (Jones, pers. comm.). Because of this taxonomic correction, Florida smoothhounds would be considered smooth dogfish and would fall under all smooth dogfish management measures, such as permit requirements and quotas. Smooth dogfish were originally included in the 1999 FMP to prevent finning of smooth

dogfish. However, smooth dogfish were removed from NMFS management in 2003 since they were protected under the Shark Finning Prohibition Act (67 FR 6124, February 11, 2002). A stock assessment has not been conducted for smooth dogfish; however, constituents have requested that NMFS implement management measures for smooth dogfish. Therefore, NMFS has determined that smooth dogfish may require conservation and management and is thus proposing to add smooth dogfish back under NMFS management. However, since the stock has not been assessed, NMFS does not have the formal biological reference points to establish an OFL, ABC, or ACL for smooth dogfish. Therefore, under the preferred alternative, NMFS is using landings data to establish the landings component of the sector ACL for smooth dogfish as required under NSG1 by 2011 for stocks not determined to be undergoing overfishing per the Magnuson-Stevens Act. Given the lack of a stock assessment, NMFS is considering various ways of setting this quota, including reviewing the landings data available and any landings trends over recent years. NMFS believes that basing the landings component of the commercial sector ACL on recent landings is acceptable given the biological characteristics of the stocks or stock complex and given that it would serve as limit on catch and prevent overfishing. As needed, NMFS could adjust the landings component of the commercial sector ACL and add in a landings component for the recreational sector ACL. As outlined above for pelagic sharks, in the absence of a specific TAC, NMFS considers these quotas to be equivalent to the ACL, ABC, and TAC for smooth dogfish. As needed and required, NMFS can adjust these ACLs and apply AMs. More information on the alternatives considered to establish the quota can be found in Chapters 2 and 4 of this document.

#### *2008 Stock Assessment for Shortfin Mako Sharks*

In 2008, an updated stock assessment of shortfin mako sharks was conducted by ICCAT's SCRS. The SCRS determined that while the quantity and quality of the data available for use in the stock assessment had improved since the 2004 assessment, the data were still uninformative and did not provide a consistent signal to inform the models used in the 2008 assessment. The SCRS noted that if these data issues could not be resolved in the future, their ability to determine stock status for these and other species would continue to be uncertain. The SCRS assessed shortfin mako sharks as three different stocks, North Atlantic, South Atlantic, and Mediterranean. However, the Mediterranean data was considered insufficient to conduct the quantitative assessments for these species.

For North Atlantic shortfin mako sharks, multiple model outcomes indicated stock depletion to be about 50 percent of virgin biomass (1950s levels) and levels of F above those resulting in MSY, whereas other models estimated considerably lower levels of depletion and no overfishing. The SCRS determined that there is a "non-negligible probability" that the North Atlantic shortfin mako stock could be below the biomass that could support MSY ( $B_{2007}/B_{msy} = 0.95-1.65$ ) and above the fishing mortality rate associated with MSY ( $F_{2007}/F_{msy} = 0.48-3.77$ ). Similar outcomes were determined by the SCRS from the 2004 assessment; however, recent biological data show decreased productivity for this species. Therefore, given the results of this assessment, NMFS has determined that North Atlantic shortfin mako is not overfished, but is approaching an overfished status and is experiencing overfishing (June 19, 2009, 74 FR 21985).

Since shortfin mako sharks have been determined to not be overfished, NMFS is not implementing a rebuilding plan at this time. NMFS considered several alternatives to end overfishing of shortfin mako sharks. Those alternatives are described in Chapters 2 and 4.

### **1.3 Purpose and Need**

NMFS published updated determinations for the SCS shark species/complex that were assessed in conjunction with a Notice of Intent (May 7, 2008, 73 FR 25665) to prepare an EIS. The Agency published a separate notice that determined shortfin mako sharks are not overfished, but are approaching an overfished status and are experiencing overfishing (June 19, 2009, 74 FR 21985). An issues and options presentation was released on July 2, 2008, followed by five scoping hearings and a public comment period that closed on November 14, 2008. A Predraft document describing potential alternatives that might be included in the DEIS and proposed rule for Amendment 3 to the 2006 Consolidated HMS FMP was released to HMS consulting parties (which includes the HMS AP) on February 11, 2009, and presented to the HMS AP at the HMS AP meeting on February 19, 2009. The HMS AP and consulting parties submitted comments on the Predraft prior to March 16, 2009.

#### **1.3.1 Need**

As described above, based on the results of the 2007 SCS stock assessment and 2008 ICCAT assessment for shortfin mako sharks, NMFS has determined that blacknose sharks are overfished and blacknose sharks and shortfin mako sharks are experiencing overfishing. In addition, NMFS has determined that smooth dogfish may need conservation and management. The Magnuson-Stevens Act also requires establishment of a mechanism in each FMP to specify ACLs and develop AMs. For these reasons, NMFS has identified the following needs for the proposed action to amend the HMS FMP:

- The Magnuson-Stevens Act requires each fishery to be managed to achieve OY while preventing overfishing. Shortfin mako is experiencing overfishing. NMFS needs to consider both domestic and international measures for ending the overfishing of the species;
- The Magnuson-Stevens Act requires NMFS to end overfishing and rebuild fisheries determined to be in an overfished condition. NMFS has determined blacknose shark to be in an overfished condition and experiencing overfishing and must amend the 2006 Consolidated HMS FMP to include management measures and propose corresponding implementing regulations to end overfishing and rebuild the fishery in the shortest time possible;
- The Magnuson-Stevens Act gives NMFS (on behalf of the Secretary) has authority to manage HMS, including oceanic sharks that it determines are in need of conservation and management. NMFS has determined that smooth dogfish, an oceanic shark, may need conservation and management and needs to amend the 2006 Consolidated HMS FMP and propose implementing regulations to provide for its management.
- The Magnuson-Stevens Act requires FMPs to include a mechanism for specifying ACLs and AMs for all fisheries. ACLs and AMs must be effective for species or complexes subject to overfishing by 2010 and for all other species or complexes no later than 2011. The 2006 Consolidated HMS FMP does not presently include such a mechanism or a

practice of specifying annual ACLs. Therefore, the 2006 Consolidated HMS FMP needs to be amended to meet this requirement by the statutory deadline for species and complexes it manages. It must also consider whether it needs to propose or amend implementing regulations to specify ACLs annually and apply AMs.

### **1.3.2 Purpose and Objectives**

The proposed action is intended to achieve the following purposes and objectives in a manner that minimizes, to the greatest extent possible, the economic impact on affected fisheries. Consistent with the 2006 Consolidated HMS FMP objectives, the Magnuson-Stevens Act, and other relevant federal laws and the corresponding need set forth above, the specific purposes and objectives of this action are to:

- Implement a rebuilding plan for blacknose sharks to ensure that fishing mortality levels for blacknose sharks are maintained at or below levels that would result in a 70 percent probability of rebuilding in the timeframe recommended by the assessment;
- End overfishing for blacknose and shortfin mako sharks;
- Provide an opportunity for the sustainable harvest of finetooth, bonnethead, and Atlantic sharpnose sharks and other sharks, as appropriate;
- Prevent overfishing of Atlantic sharks;
- Consider smooth dogfish management measures for smooth dogfish sharks in federal waters, as appropriate.
- Develop an appropriate mechanism for specifying ACLs to prevent and end overfishing within the constraints of existing data and annually set ACLs and apply AMs to ensure that ACLs are not exceeded.

## **1.4 Other Considerations**

### *Administrative amendments*

As described in the proposed rule, in addition to the management measures described in this document, NMFS is also proposing some administrative actions to clarify, correct, and update the existing regulations at the following citations: clarifying §635.5 (b) regarding the reporting of fin weight and dressed weight separately on dealer reports; modifying language at §635.20 (e) to clarify that only one shark per vessel per trip can be taken along with one bonnethead and one Atlantic sharpnose shark per person per trip; propose to rename the closure “South Carolina A” as “Northern South Carolina” at §635.21 (d); proposing language at §635.27 (b) to allow the take of dusky sharks under EFPs, based on Agency’s discretion; removing the word “intact” at §635.30 (c) and clarifying that sharks cannot be cut up and used as bait on vessels issued a federal commercial shark permit; updating a reference from the previous Billfish and Tunas, Swordfish, and Shark FMPs to the current Consolidated HMS FMP at §635.32 (e); and updating the species names to match the most recent scientific naming determinations at Table 1 of Appendix A, in addition to adding smooth dogfish to this list. None of these administrative actions are expected to have any economic, social, or ecological impacts.

### *Specific requests for public comment*

NMFS is also seeking public comment the following items: the potential accuracy of the landings used to calculate the commercial quota for the smooth dogfish fishery; the potential accuracy of the landings used to calculate the smooth dogfish quota for EFPs, SRPs, and display permits; a request for any additional smooth dogfish data that could be used to designate smooth dogfish EFH and the accuracy of the proposed smooth dogfish EFH; the boundary for the use of gillnets; the VMS requirement for shark gillnet vessels; the requirement to tend gillnet gear for smooth dogfish fishermen; whether or not NMFS should implement a specific bag limit for recreational anglers for smooth dogfish; and whether or not NMFS should allow smooth dogfish to be retained when caught with trawl gear.

### *Circle Hooks*

The Agency compiled the results of several studies examined the use of circle hooks in various bottom longline (BLL) fisheries. The results of these BLL studies were inconclusive regarding the impact of circle hooks on protected resources as well as target species caught in BLL fisheries. The efficacy of using circle hooks to reduce bycatch and post-hooking mortality of sea turtles is well-documented in other fisheries, including the HMS pelagic longline (PLL) fishery. Circle hooks are required for the Atlantic HMS PLL fishery consistent with the June 2004 Biological Opinion. The Agency is not proposing that circle hooks be required for BLL fisheries targeting shark at this time for several reasons: 1) lack of data demonstrating conservation benefits in BLL fisheries, 2) potential inconsistencies between Council-managed and HMS BLL fisheries that may occur as a result of requiring circle hooks, and 3) observer data indicating that circle hooks are already the most frequently used type of hook on trips targeting sharks in the South Atlantic and Gulf of Mexico regions. Because of this, NMFS did not implement any circle hook requirements in the BLL fishery under Amendment 2 to the Consolidated HMS FMP and is not considering circle hook requirements in the BLL fishery under this amendment. NMFS is unaware of any recent studies regarding circle hooks in the BLL fishery, but NMFS continues to monitor the effectiveness and bycatch associated with circle and J hooks through the shark BLL observer program both inside and outside of the Atlantic shark research fishery.

### *Catch Shares*

A catch share is the allocation of the available fishery quota among participants within the fishery. Limited Access Privilege Programs (LAPPs) are one type of catch share program. These programs may be implemented to address numerous issues, including but not limited to: ending the race for fish, reducing overcapitalization, and improving efficiency and safety, while still addressing the biological needs of a stock. These programs can be designed specifically to meet the needs of a fishery for which they are designed, provided they meet the requirements outlined in the Magnuson-Stevens Act. Catch shares were not considered for the shark fishery in this amendment because of the ramifications this type of program would have for the existing permit structure and the time required for implementing these programs.

To properly design a catch share program that appropriately considers the views and interests of all stakeholders and then implements such a system would have take NMFS several

years, and therefore, catch shares were not considered a reasonable alternative for this action given the mandate in § 304(e) of the Magnuson-Stevens Act to have ACLs in place for stocks experiencing overfishing by 2010. However, NMFS is considering revisions to the existing permit structure within HMS fisheries. This could include a catch share program for sharks as well as other HMS as was discussed during the September/October 2008 HMS Advisory Panel. NMFS published an Advanced Notice of Proposed Rulemaking (ANPR) on June 1, 2009 (74 FR 26174), to initiate broad public participation in considering catch shares for HMS fisheries.

## **Literature Cited**

Nichols, S. 2007. Bycatch of Small Coastal Sharks in the Offshore Shrimp Fishery. SEDAR 13-DW-32, pp. 11.

NMFS. 2007. SEDAR 13 Stock Assessment Report: Small Coastal Sharks, Atlantic Sharpnose, Blacknose, Bonnethead, and Finetooth Shark. Highly Migratory Species Management Division, 1315 East West Highway, Silver Spring, MD 20910. 375 pp.