Draft Environmental Assessment, Regulatory Impact Review, and Initial Regulatory Flexibility Analysis for a Rule to Revise Commercial Management Measures for Atlantic Blacknose Sharks and Recreational Management Measures for Atlantic Sharks

United States Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Office of Sustainable Fisheries
Atlantic Highly Migratory Species Management Division

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Action:	Rule to Revise Commercial Management Measures for Atlantic Blacknose Sharks and Recreational Management Measures for Atlantic Sharks
Type of Statement:	Draft Environmental Assessment, Regulatory Impact Review, and Initial Regulatory Flexibility Analysis
Lead Agency:	National Marine Fisheries Service Office of Sustainable Fisheries
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Abstract: The National Marine Fisheries Service (NMFS) is proposing several changes for commercial and recreational Atlantic shark fisheries. This action is responsive to the framework for implementing management measures established in Amendment 14 to the Atlantic Highly Migratory Species Fishery Management Plan, findings from the Atlantic Shark Fishery Review document, public comments from scoping for Amendment 16 to the Atlantic Highly Migratory Species Fishery Management Plan, and recent domestic laws and international agreements that are having direct and indirect effects on shark fisheries. Specifically, NMFS is considering options to: (1) remove the blacknose shark management boundary in the Atlantic region, (2) modify the commercial retention limit for blacknose sharks in the Atlantic region, (3) revise the recreational minimum size limits for Atlantic shark species, and (4) revise the recreational retention limits for Atlantic shark species. The goal of this action is to increase management flexibility to react to changes in the Atlantic shark fisheries and optimize the ability of the commercial and recreational shark fisheries to harvest available quota to the extent practicable. NMFS is taking this action consistent with the Magnuson-Stevens Fishery Conservation and Management Act, including section 304(g).

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1 Introduction

1.1 REGULATORY AUTHORITIES

The National Marine Fisheries Service (NMFS), on behalf of the Secretary of Commerce, is responsible for managing Atlantic highly migratory species (HMS)[1], including the federal Atlantic swordfish, shark, tuna, and billfish fisheries, pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act; 16 U.S.C. 1801 *et seq*.) and consistent with the Atlantic Tunas Convention Act (ATCA; 16 U.S.C. 971 *et seq*.). Under the Magnuson-Stevens Act, NMFS must, consistent with 10 National Standards, manage fisheries to maintain optimum yield on a continuing basis, while preventing overfishing. Since 1993, under the authority provided in § 304(g)(1) of the Magnuson-Stevens Act, NMFS has implemented several fishery management plans (FMP), FMP amendments, and numerous regulations relating to HMS fisheries under the authority of the Magnuson-Stevens Act. ATCA is the implementing statute for binding recommendations of the International Commission for the Conservation of Atlantic Tunas (ICCAT). Currently, NMFS manages HMS fisheries under the 2006 Consolidated HMS FMP, its amendments, and implementing regulations at 50 CFR part 635.

In accordance with both the Magnuson-Stevens Act (see § 304(g)(1)(E) requiring NMFS to review, on a continuing basis, and revise as appropriate, the conservation and management measures for Atlantic HMS) and ATCA, NMFS analyzed the potential environmental consequences, including ecological, economic, and social impacts, for the alternatives in this Environmental Assessment (EA) and associated proposed rule. This action is responsive to the framework for implementing management measures established in Amendment 14 to the HMS FMP (Amendment 14) (88 FR 4157, January 24, 2023), findings from the Atlantic Shark Fishery Review (SHARE) document[2] (88 FR 16944, March 21, 2023), public comments from scoping for Amendment 16 to the HMS FMP (Amendment 16), and recent domestic laws and international agreements that are having direct and indirect effects on shark fisheries. The goal of this action is to increase management flexibility to react to changes in the Atlantic shark fisheries and optimize the ability of the commercial and recreational shark fisheries to harvest available quota to the extent practicable.

As described above, the Magnuson-Stevens Act, among other things, requires measures necessary for the conservation and management of the fishery to be consistent with the 10 National Standards set forth in 16 U.S.C. 1851(a) (MSA § 301(a)). While all the National Standards are relevant, specific to the objectives of this action, the National Standards state that measures must: prevent overfishing while achieving optimum yield from the fishery (National Standard 1); be based on the best scientific information available (National Standard 2); to the

[1] The Magnuson–Stevens Act, Section 3, defines the term "highly migratory species" as tuna species, marlin (*Tetrapturus* spp. and *Makaira* spp.), oceanic sharks, sailfishes (*Istiophorus* spp.), and swordfish (*Xiphias gladius*) (16 U.S.C. § 1802(21)). Further, the Magnuson-Stevens Act, Section 3, defines the term "tunas species" as albacore tuna (*Thunnus alalunga*), bigeye tuna (*Thunnus obesus*), bluefin tuna (*Thunnus thynnus*), skipjack tuna (*Katsuwonus pelamis*), and yellowfin tuna (*Thunnus albacares*) (16 U.S.C. § 1802(44)).

[2] The SHARE document is available at: https://www.fisheries.noaa.gov/action/atlantic-shark-fishery-reviewshare.

extent practicable, manage the stock throughout its range and manage interrelated stocks as a unit or in close coordination (National Standard 3); take into account and allow for variations among fisheries, fishery resources, and catches (National Standard 6); and minimize bycatch, and to the extent bycatch cannot be avoided, minimize the mortality of bycatch (National Standard 9). Furthermore, the Magnuson-Stevens Act allows for management actions to designate zones where and periods when, fishing shall be limited, or shall not be permitted, or shall be permitted only by specified types of fishing vessels or with specified types and quantities of fishing gear (16 U.S.C. 1853(b)(2)(A); MSA § 303(b)(2)(A)). The Magnuson-Stevens Act also allows for management actions to establish specified limitations which are necessary and appropriate on the catch of fish (based on area, species, size, number, weight, sex, bycatch, total biomass, or other factors) (16 U.S.C. 1853(b)(3)(A); MSA § 303(b)(3)(A)).

In addition to the Magnuson-Stevens Act and ATCA, 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 amended by the Fiscal Responsibility Act of 2023 (137 Stat. 10, P.L. 118-5 (June 3, 2023)), National Oceanic and Atmospheric Administration (NOAA) Administrative Order 216-6A (NAO 216-6A), and the Companion Manual to NAO 216-6A: Compliance with the National Environmental Policy Act, Executive Orders 12114, Environmental Effects Abroad of Major Federal Actions; 11988 and 13690, Floodplain Management; and 11990, Protection of Wetlands, issued April 22, 2016 (Companion Manual).

1.2 BRIEF MANAGEMENT HISTORY

This section provides a brief overview of Atlantic shark management relative to this action. More detail regarding the history of Atlantic shark management is in Chapter 3 of this document. Additionally, a more comprehensive history of Atlantic shark management is available in the SHARE document, which analyzes trends within the commercial and recreational shark fisheries to identify main areas of success and concerns with conservation and management measures, and identifies ways to improve management of the shark fishery.

NMFS finalized the first FMP for Sharks of the Atlantic Ocean in 1993 (1993 FMP) (58 FR 21931, April 26, 1993). The 1993 FMP established many of the management measures still in place today including permitting and reporting requirements, management complexes, commercial quotas, and recreational minimum size and retention limits. Relevant to this action, the 1993 FMP implemented recreational retention limits for Atlantic large coastal sharks (LCS), pelagic sharks, and small coastal sharks (SCS).

NMFS then revised the 1993 FMP to include swordfish and tunas in the 1999 FMP for Atlantic Tunas, Swordfish, and Sharks (1999 FMP) (64 FR 29090, May 28, 1999), which included numerous measures to rebuild or prevent overfishing of sharks in commercial and recreational fisheries. The 1999 FMP, among other things, established a recreational minimum size limit for most shark species of 54 inches (137 centimeters (cm)) fork length (FL). NMFS based the

recreational minimum size limit on the size at maturity for sandbar sharks. Additionally, the 1999 FMP reduced recreational retention limits for all sharks to one shark per vessel per trip. In 2003, NMFS amended the 1999 FMP (Amendment 1) (68 FR 74746, December 24, 2003).

In 2006, NMFS consolidated the Atlantic Tunas, Swordfish, and Shark FMP and its amendments with the Atlantic Billfish FMP and its amendments into the HMS FMP (71 FR 58058, October 2, 2006). Since then, NMFS has made or initiated 17 amendments to the HMS FMP.

Amendment 2 to the HMS FMP (Amendment 2) (73 FR 35778, June 24, 2008, corrected at 73 FR 40658, July 15, 2008) included, among other things, management measures that expanded the shark species authorized for recreational retention. The shark species then authorized for recreational retention included tiger sharks, non-ridgeback LCS (blacktip, spinner, bull, lemon, nurse, great hammerhead, smooth hammerhead, and scalloped hammerhead sharks), SCS (bonnethead, Atlantic sharpnose, finetooth, and blacknose sharks), and pelagic sharks (shortfin mako, common thresher, oceanic whitetip, blue, and porbeagle sharks). Additionally, recreational retention limits were set at one Atlantic sharpnose shark and one bonnethead shark per person per trip with no minimum size, and one per person per vessel for all other authorized shark species greater than 54 inches (137 cm) FL. Amendment 2 also set commercial retention limits to no limit for SCS for Directed shark limited access permit (LAP) holders and 16 SCS for Incidental shark LAP holders.

In 2007, Southeast Data, Assessment, and Review (SEDAR) completed a stock assessment on SCS (SEDAR 13). Consequently, NMFS determined blacknose sharks to be overfished with overfishing occurring (73 FR 25665, May 7, 2008). NMFS then completed Amendment 3 to the HMS FMP (Amendment 3) (75 FR 30484, June 1, 2010), which, among other things, implemented management measures to rebuild and end overfishing of blacknose sharks. Specifically, Amendment 3 linked the non-blacknose SCS and blacknose shark fisheries so that both fisheries would close when landings of either reached 80 percent of its quota. The recreational retention and minimum size limits for SCS did not change.

In 2010, SEDAR conducted another stock assessment on blacknose sharks (SEDAR 21) and identified two separate stocks of blacknose sharks (one in the Atlantic Ocean and one in the Gulf of America). Accordingly, NMFS determined the Atlantic stock of blacknose sharks to be overfished with overfishing occurring and the Gulf of America stock of blacknose sharks to have an unknown stock status. Amendment 5a to the HMS FMP (Amendment 5a) (78 FR 40317, July 3, 2013) was developed to address overfishing and rebuild the Atlantic blacknose shark stock, among other issues. Amendment 5a divided the blacknose and non-blacknose SCS quotas into separate regional quotas (Atlantic and Gulf of America) consistent with the stock assessment determination. In the commercial shark fishery, Amendment 5a established regional quota linkages between management groups whose species are often caught together to prevent exceeding newly established quotas through discarded bycatch. In the recreational shark fishery, Amendment 5a established a minimum size limit for all hammerhead sharks of 78 inches (198.1 cm) FL. NMFS based the minimum size limit for hammerhead sharks on the size at maturity for female scalloped hammerhead sharks.

Amendment 6 to the HMS FMP (Amendment 6) (80 FR 50073, August 18, 2015), among other things, established a management boundary in the Atlantic region along 34°00' N. lat. (approximately at Wilmington, North Carolina) for the SCS fishery, maintained SCS quota linkages south of the 34°00' N. lat. management boundary, and prohibited the retention of blacknose sharks north of the 34°00' N. lat. management boundary.

Amendment 9 to the HMS FMP (Amendment 9) (80 FR 73128, November 24, 2015), among other things, established management measures for smoothhound sharks in the Atlantic and Gulf of America regions. Specifically, in the recreational shark fishery, Amendment 9 established no retention limit for smoothhound sharks (i.e., smooth dogfish) with no minimum size limit.

In 2017, NMFS implemented a final rule (81 FR 90241, December 14, 2016) that established a commercial retention limit of eight blacknose sharks for all Directed and Incidental shark LAP holders in the Atlantic region south of 34°00' N. lat. The intent of this action was to maximize the utilization of the non-blacknose SCS quota while minimizing mortality and discards of blacknose sharks, consistent with the existing rebuilding plan, and other SCS.

In Amendment 14 (88 FR 4157, January 24, 2023), NMFS set forth a revised framework for establishing quotas and related management measures for Atlantic shark fisheries and incorporated for potential use several optional fishery management tools that were adopted in the revised guidelines for implementing National Standard 1 of the Magnuson-Stevens Act (81 FR 71858, October 18, 2016). Specifically, Amendment 14 modified the general procedures for establishing the acceptable biological catch (ABC) and annual catch limits (ACL), and included measures to actively monitor all commercial and recreational sector ACLs. Amendment 14 also adopted multi-year overfishing status determination criteria, which would allow NMFS to compare a three-year average of fishing mortality estimates to the overfishing limit (OFL) to determine overfishing status in certain circumstances. NMFS anticipates that the revised framework for establishing quota and related management measures for Atlantic shark fisheries, as established in Amendment 14, may be implemented through Amendment 16 to the HMS FMP (Amendment 16) (Notice of Intent to Prepare an Environmental Impact Statement; 88 FR 29617, May 8, 2023).

For Amendment 16, NMFS conducted scoping to identify significant issues related to the management of Atlantic shark fisheries. The scoping document for Amendment 16 considered extensive changes to commercial and recreational shark fisheries management. The management options presented for public comment included changes to commercial and recreational shark management measures related to commercial and recreational quotas, management groups, retention limits, and size limits. During scoping for Amendment 16, a number of commenters noted that Amendment 16 was too large and recommended that NMFS split the management measures into multiple smaller actions. As such, NMFS decided to remove some actions from Amendment 16 and consider them separately in this rule. Thus, NMFS has already received input on many of the management options considered in this action from the public, including fishery participants and the HMS Advisory Panel. NMFS does not expect to release Draft Amendment 16 and the associated proposed rule until early 2026.

On May 7, 2025, NMFS presented this rulemaking to the HMS Advisory Panel. HMS Advisory Panel members expressed general support for commercial and recreational management measures that would increase opportunities to harvest available quota. Specifically, HMS Advisory Panel members supported the commercial harvest of blacknose sharks in the entire Atlantic region, a commercial blacknose shark retention limit in the Atlantic region that is higher than the status quo, and lower (or no) recreational minimum size and retention limits for some shark species. Additionally, some HMS Advisory Panel members requested that NMFS consider recreational management measures that would allow retention of certain shark species (e.g., blacktip shark) on a per person basis, higher retention limits for charter/headboat fishing trips, and maximum size limits. NMFS also heard some support and some concerns from the public during the public comment portion of the HMS Advisory Panel meeting. NMFS did not want to further delay this action to fully consider the suggestions received during the HMS Advisory Panel meeting; however, NMFS could consider changes to the preferred alternatives based on public comments or in a future separate action.

1.3 PROPOSED ACTION, PURPOSE, AND NEED

Proposed Action: NMFS is considering options to: (1) remove the blacknose shark management boundary in the Atlantic region, (2) modify the commercial retention limit for blacknose sharks in the Atlantic region, (3) revise the recreational minimum size limits for Atlantic shark species, and (4) revise the recreational retention limits for Atlantic shark species.

Purpose: The purpose of this action is to increase management flexibility to react to changes in the Atlantic shark fisheries and optimize the ability of the commercial and recreational shark fisheries to harvest available quota to the extent practicable.

Need: The need for this action is to be responsive to the new framework for implementing management measures established in Amendment 14, findings from the SHARE document, public comments from scoping for Amendment 16, and recent domestic laws and international agreements that are having direct and indirect effects on the commercial fishery.

1.4 SCOPE AND ORGANIZATION OF THIS DOCUMENT RELATED TO THE NATIONAL ENVIRONMENTAL POLICY ACT

In considering the management measures outlined in this document, NMFS must comply with a number of federal statutes and executive orders. To comply with these requirements and eliminate redundancies to the extent practicable, NMFS consolidates all the requirements into one comprehensive document. Therefore, this document considers the requirements under all relevant statutes and executive orders including NEPA. Under NEPA, the purpose of an EA is to provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a finding of no significant impact (FONSI) and to aid in the agency's compliance with NEPA when no EIS is necessary.

In developing this document, NMFS adhered to the procedural requirements of NEPA as amended by the 2023 Fiscal Responsibility Act, NAO 216-6A, and the accompanying Companion Manual to:

- Fully integrate NEPA into the agency planning and decision making process;
- Fully consider the impacts of NOAA's proposed actions on the quality of the human environment;
- Involve interested and affected agencies, governments, organizations, and individuals early in the agency planning and decision making process when significant impacts are or may be expected to affect the quality of the human environment from implementation of proposed major federal actions; and
- Conduct and document environmental reviews and related decisions appropriately and efficiently.

The following definitions were generally used to characterize the nature of the various impacts evaluated in this EA. Chapter 4 describes more specifically how these definitions were used for each alternative.

- *Effects or impacts*. For purposes of this EA, "effects or impacts" are considered to be the changes to the human environment from the proposed action or alternatives that are reasonably foreseeable and include the following: direct effects, which are caused by the action and occur at the same time and place; indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable; cumulative effects, which are effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (federal or non-federal) or person undertakes such other actions; and effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative.
- *Short-term or long-term impacts*. These characteristics are determined on a case-by-case basis and do not refer to any rigid time period. In general, short-term impacts are those that would occur only with respect to a particular activity or for a finite period. Long-term impacts are those that are more likely to be persistent and chronic.
- *Minor, moderate, or major impacts*. These relative terms are used to characterize the magnitude of an impact. Minor impacts are generally those that might be perceptible but, in their context, are not amenable to measurement because of their relatively minor character. Moderate impacts are those that are more perceptible and, typically, more amenable to quantification or measurement. Major impacts are those that, in their context and due to their intensity (severity), have the potential to be significant and, thus, warrant heightened attention and examination for potential means for mitigation to fulfill the requirements of NEPA.
- *Neutral, adverse, or beneficial impacts*. A neutral impact is one having neither positive nor negative outcomes on the man-made or natural environment. An adverse impact is one having unfavorable, or undesirable outcomes on the man-made or natural environment. A beneficial impact is one having positive outcomes on the man-made or natural environment. A single act might result in adverse impacts on one environmental resource and beneficial impacts on another resource.

This EA assesses the potential and cumulative ecological, economic, and social impacts of removing the blacknose shark management boundary in the Atlantic region, modifying the commercial retention limit for blacknose sharks in the Atlantic region, revising the recreational minimum size limits for Atlantic shark species, and revising the recreational retention limits for Atlantic shark species. This document comprehensively analyzes the alternatives considered for all these requirements. The chapters that follow describe the management measures and potential alternatives (Chapter 2); the affected environment as it currently exists (Chapter 3); the probable consequences on the human environment that may result from the implementation of the management measures and their alternatives, including the potential impacts on the fisheries (Chapter 4); any cumulative impacts from this action (Section 4.8); and mitigation and unavoidable impacts (Chapter 5). While NMFS wrote some of the chapters to comply with the specific requirements under NEPA, as described below, some of the analyses in these chapters may also include analyses or descriptions necessary to comply with the specific requirements of other statutes and executive orders. Overall, it is the document as a whole that meets all the federal requirements and not any individual chapter.

1.5 SCOPE AND ORGANIZATION OF THIS DOCUMENT RELATED TO OTHER APPLICABLE LAWS AND EXECUTIVE ORDERS

As described above, when considering management actions, NMFS must comply with a variety of statutes and executive orders. To do this, NMFS consolidates all the requirements into one comprehensive document. Therefore, this document considers, in addition to the NEPA requirements as described above, the requirements under all relevant statutes and executive orders including the Magnuson-Stevens Act, E.O. 12866 (Regulatory Planning and Review), and the Regulatory Flexibility Act (RFA). In addition to the purpose and need outlined in this chapter and the various alternatives outlined in Chapter 2, Chapter 4 provides a summary of all the economic analyses and associated data; Chapter 6 addresses the requirements under E.O. 12866, also known as the Regulatory Impact Review; Chapter 7 provides the Initial Regulatory Flexibility Analysis (IRFA) required under RFA; and Chapter 8 provides additional consistency information that is required under various other statutes. As described above, while NMFS wrote some of the chapters to comply with the specific requirements under these various statutes and executive orders, it is the document as a whole that meets all the federal requirements and not any individual chapter.

2 Summary of the Alternatives

NEPA requires that any federal agency proposing a major federal action consider all reasonable alternatives, in addition to the proposed action. The evaluation of alternatives in an EA assists NMFS in ensuring that any unnecessary impacts are avoided through an assessment of alternative ways to achieve the underlying purpose of the project that may result in less environmental harm.

To warrant detailed evaluation, an alternative must be reasonable[3] and meet the purpose and need of the action (see Section 1.3). The following screening criteria were used to determine whether an alternative is reasonable. Each of the alternatives described in this chapter meet each of these screening criteria. There were no other alternatives which were considered, and thus none which were found not to be reasonable.

Screening Criteria – To be considered "reasonable" for purposes of this EA, an alternative must meet the following criteria:

- An alternative must be consistent with the 10 National Standards set forth in the Magnuson-Stevens Act.
- An alternative must be administratively feasible. The costs associated with implementing an alternative cannot be prohibitively exorbitant or require unattainable infrastructure.
- An alternative cannot violate other laws (e.g., ESA, MMPA).
- An alternative must be consistent with the HMS FMP and its amendments.

This chapter includes a full range of reasonable alternatives designed to meet the purpose and need for the action described in Chapter 1. These alternatives are listed below. The environmental, economic, and social impacts of these alternatives are discussed in later chapters.

2.1 ALTERNATIVES FOR COMMERCIAL SHARK FISHERY MANAGEMENT

2.1.1 BLACKNOSE SHARK MANAGEMENT BOUNDARY IN THE ATLANTIC REGION

NMFS is considering two alternatives for the blacknose shark management boundary in the Atlantic region.

The "Atlantic region" is defined in HMS regulations (§ 635.27(b)(1)) by a boundary between the Gulf of America region and the Atlantic region beginning on the east coast of Florida at the

[3] Section 102(C)(iii) of NEPA (42 U.S.C. § 4332) directs agencies to consider "a reasonable range of alternatives to the proposed agency action, including an analysis of any negative environmental impacts of not implementing the proposed agency action in the case of a no action alternative, that are technically and economically feasible, and meet the purpose and need of the proposal." In determining the scope of alternatives to be considered, the emphasis is on what is "reasonable" rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative.

mainland at 25°20.4′ N. lat., proceeding due east. NMFS considers any water and land to the north and east of that boundary, for the purposes of quota monitoring and setting of quotas, to be within the Atlantic region. NMFS considers any water and land to the south and west of that boundary, for the purposes of quota monitoring and setting of quotas, to be within the Gulf of America region.

Alternative A1: Keep the blacknose shark management boundary in the Atlantic region. – No Action

Under Alternative A1, the No Action alternative, NMFS would maintain the blacknose shark management boundary in the Atlantic region. Currently, vessels issued a Directed or Incidental shark LAP can only commercially harvest blacknose sharks south of 34°00' N. lat. (approximately at Wilmington, North Carolina).

Alternative A2: Remove the blacknose shark management boundary in the Atlantic region. – *Preferred Alternative*

Under Alternative A2, the preferred alternative, NMFS would remove the 34°00' N. lat. blacknose shark management boundary in the Atlantic region. Under this alternative, vessels issued a Directed or Incidental shark LAP would be able to commercially harvest blacknose sharks in the entire Atlantic region.

2.1.2 BLACKNOSE SHARK COMMERCIAL RETENTION LIMIT IN THE ATLANTIC REGION

NMFS is considering three alternatives for the blacknose shark commercial retention limit for vessels issued a Directed shark LAP in the Atlantic region. NMFS is not considering changes to the blacknose shark commercial retention limit for vessels issued an Incidental shark LAP in the Atlantic region (i.e., eight blacknose sharks per vessel per trip) in this action.

Alternative B1: Keep the current commercial retention limit for blacknose sharks in the Atlantic region. - No Action

Under Alternative B1, the No Action alternative, NMFS would maintain the commercial retention limit of eight blacknose sharks per vessel per trip for vessels issued a Directed shark LAP in the Atlantic region.

Alternative B2: Establish a flexible commercial retention limit of 0 to 60 sharks with a default limit of 25 sharks for blacknose sharks in the Atlantic region. - *Preferred Alternative*

Under Alternative B2, the preferred alternative, NMFS would establish a flexible commercial retention limit of 0 to 60 blacknose sharks per vessel per trip for vessels issued a Directed shark LAP in the Atlantic region. The default commercial retention limit that would apply at the start of each fishing year would be 25 blacknose sharks per vessel per trip for vessels issued a Directed shark LAP in the Atlantic region. The commercial retention limit may be adjusted during the fishing year, based on the inseason trip limit adjustment criteria at § 635.24(a)(8).

NMFS used a maximum commercial retention limit of 60 blacknose sharks per vessel per trip for this alternative based on the Southeast Fisheries Science Center Observer Program data from

2017 through 2022, which showed that commercial fishermen fishing with gillnet and bottom longline gears have interacted with up to 54 blacknose sharks on a single trip in the Atlantic region. A maximum commercial retention limit of 60 blacknose sharks per vessel per trip encompasses the maximum number of blacknose shark interactions observed on a commercial fishing trip in the last several years, and therefore would minimize regulatory discards and maximize the efficiency of trips. A maximum of 60 would also include an added buffer for management flexibility, should interactions increase or other conditions change that warrant a higher retention limit.

NMFS used a default commercial retention limit of 25 blacknose sharks for this alternative based on a number of factors, including the commercial blacknose shark quota, fishing trends from the most active participants in the fishery, and interactions between blacknose sharks and commercial fishermen in the Atlantic region. The commercial blacknose shark quota is 37,921 lb dw (17.2 mt dw) and, based on Southeast Fisheries Science Center Observer Program data from 2017 through 2022, the average weight of a blacknose shark landed on commercial trips is 11.4 lb dw. Thus, it would take approximately 3,326 sharks to harvest the blacknose shark quota (37,921 lb dw/11.4 shark = 3,326.4 sharks). According to the HMS electronic dealer reporting system (eDealer) data from 2017 through 2022, five vessels account for the majority (78 percent) of blacknose shark landings and take an average of 137 trips a year. NMFS based the analysis for this alternative on the five vessels that land the majority of blacknose sharks because they are the fishery participants that target blacknose sharks on their fishing trips, whereas the remaining fishery participants generally only opportunistically retain incidentally caught blacknose sharks. Thus, NMFS calculated that the top five most active vessels in the fishery could retain as many as 24 blacknose sharks per vessel per trip to harvest the blacknose shark quota without a fishery closure (3,326 sharks/137 trips = 24.3 sharks/trip). However, the Southeast Fisheries Science Center Observer Program data indicate that commercial fishermen fishing with gillnet and bottom longline gears can interact with over 50 blacknose sharks on a given trip in the Atlantic region. NMFS prefers a default commercial retention limit of 25 blacknose sharks per vessel per trip to optimize the number of blacknose sharks that could be retained per trip without significantly affecting the total number of fishing trips that could be taken in a given year to land the full quota. Additionally, a default retention limit of 25 blacknose sharks provides a buffer so Directed shark LAP holders can retain most or all blacknose shark catch on any given fishing trip.

Alternative B3: Remove the commercial retention limit for blacknose sharks in the Atlantic region.

Under Alternative B3, NMFS would remove the commercial retention limit for blacknose sharks in the Atlantic region. For vessels issued a Directed shark LAP, there would be no trip limit for blacknose sharks.

2.2 ALTERNATIVES FOR RECREATIONAL SHARK FISHERY MANAGEMENT

2.2.1 RECREATIONAL MINIMUM SIZE LIMITS

NMFS is considering five alternatives for minimum size limits in the recreational shark fishery.

NMFS is not considering changes to the recreational minimum size limit for shortfin mako sharks in this action. The recreational minimum size limits for shortfin mako sharks are consistent with ICCAT Recommendations 17-08 and 19-06. At this time, the recreational retention limit is zero and anglers may not land shortfin mako sharks.

Recreational minimum size limits for authorized shark species apply to recreational HMS permit holders (those who hold HMS Angling or Charter/Headboat permits, and Atlantic Tunas General category and Swordfish General Commercial permits when participating in a registered HMS tournament).

Alternative C1: Keep the current recreational minimum size limits for sharks. - No Action

Under Alternative C1, the No Action alternative, NMFS would maintain the current recreational minimum size limits for sharks under HMS regulations (§ 635.20(e)). The current minimum size limits are as follows:

- All sharks, unless otherwise specified, must be at least 54 inches (137 cm) FL.
- All hammerhead sharks (other than bonnethead sharks) must be at least 78 inches (198.1 cm) FL.
- There is no size limit for Atlantic sharpnose, bonnethead, or smoothhound sharks.

Alternative C2: Establish recreational minimum size limits for sharks based on each species' female size at maturity.

Under Alternative C2, NMFS would establish recreational minimum size limits that are specific to the female size at maturity for each species. Updated female size at maturity information is available in stock assessment documentation, the SHARE document, HMS essential fish habitat (EFH) documentation (e.g., Amendment 10 to the HMS FMP (Amendment 10) (82 FR 42329, September 7, 2017)), and recent scientific literature (see Table 3.2). See Table 2.1 for recreational minimum size limits for shark species under Alternative C2.

Table 2.1 Recreational minimum size limits for shark species under Alternative C2.

Shark Species	Recreational Minimum Size Limit (FL) (inches (cm))
Atlantic sharpnose	25 (63.5)
Blacknose	34 (86.4)
Blacktip	48 (121.9)
Blue	73 (185.4)
Bonnethead	29 (73.7)
Bull	75 (190.5)
Common thresher	83 (210.8)
Finetooth	40 (101.6)
Hammerhead, great	81 (205.7)
Hammerhead, scalloped	72 (182.9)
Hammerhead, smooth	79 (200.7)
Lemon	76 (193)
Nurse	89 (226.1)[1]
Porbeagle	82 (208.3)
Smoothhound	35 (88.9)
Spinner	59 (149.9)
Tiger	103 (261.6)

Note: NMFS based the recreational minimum size limits in this table on each species' female size at maturity. Where the source material reported ranges for female size at maturity, NMFS selected midpoint values for the recreational minimum size limit.

[1] Size at maturity for nurse sharks is listed here as total length (TL). There is no well-defined fork in the tail for nurse sharks; accordingly, NMFS deemed TL to be an appropriate measurement for management purposes.

Alternative C3: Establish recreational minimum size limits for shark groups based on grouped species' female sizes at maturity.

Under Alternative C3, NMFS would group certain shark species together and establish a recreational minimum size limit for each group. NMFS would base the recreational minimum size limit on a midpoint value for the female sizes at maturity for the shark species in that group. Grouping certain shark species together would minimize the complexity of shark regulations for anglers.

NMFS grouped shark species based on a number of factors, including species that look similar, have similar sizes at maturity, or anglers could catch them in similar areas using similar fishing techniques. NMFS used the following rationale for grouping shark species together under Alternative C3:

- *Atlantic sharpnose, bonnethead, and smoothhound sharks*: Anglers could catch Atlantic sharpnose and bonnethead sharks in similar areas using similar fishing techniques. Currently, Atlantic sharpnose, bonnethead, and smoothhound sharks are similarly managed in the recreational shark fishery (i.e., no minimum size limit) and under Alternative C3, these species would continue to have no minimum size limit. Thus, NMFS grouped these species together.

- *Blacknose and finetooth sharks*: Blacknose and finetooth sharks have similar sizes at maturity. Additionally, they look similar and can be difficult to distinguish. To avoid misidentification during recreational fishing activities, NMFS grouped these species together.
- *Blacktip and spinner sharks*: Blacktip and spinner sharks look similar and can be difficult to distinguish. To avoid misidentification during recreational fishing activities, NMFS grouped these species together.
- *Bull, great hammerhead, lemon, nurse, scalloped hammerhead, smooth hammerhead, and tiger sharks*: NMFS grouped these LCS together because most of them have similar sizes at maturity and anglers could catch them in similar areas using similar fishing techniques.
- *Blue, common thresher, and porbeagle sharks*: NMFS grouped these pelagic shark species together because they have similar sizes at maturity and anglers could catch them in similar areas using similar fishing techniques.

NMFS selected the recreational minimum size limits under Alternative C3 based on a midpoint value of the female sizes at maturity for the shark species grouped together. A midpoint value would result in a minimum size limit that balances differing sizes at maturity for grouped species while limiting the unintentional harvest of immature individuals of any species in the group. See Table 2.2 for shark groups and their respective recreational minimum size limits under Alternative C3.

Table 2.2 Recreational minimum size limits for shark groups under Alternative C3.

Shark Group	Recreational Minimum Size Limit (FL) (inches (cm))
Atlantic sharpnose, bonnethead, and smoothhound	No limit
Blacknose and finetooth	38 (96.5)
Blacktip and spinner	48 (121.9)
Bull, great hammerhead, lemon, nurse, scalloped hammerhead, smooth hammerhead, and tiger	79 (200.7)
Blue, common thresher, and porbeagle	82 (208.3)

Alternative C4: Establish flexible recreational minimum size limits for shark groups based on grouped species' female sizes at maturity. - *Preferred Alternative*

Under Alternative C4, the preferred alternative, NMFS would group certain shark species together and establish a recreational minimum size limit range for each group. NMFS would base the default recreational minimum size limit on a midpoint value of the female sizes at maturity for the shark species in that group, or else it would remain consistent with current HMS regulations (§ 635.20(e)). The recreational minimum size limit range would encompass the female sizes at maturity for all shark species in each group. The minimum size limit for a group at any given time may be greater than or less than the female size at maturity of individual species within the group, but the limit would always be within the established minimum size limit range for the group.

Similar to Alternative C3, NMFS grouped shark species based on a number of factors, including species that look similar, have similar sizes at maturity, or anglers could catch them in similar areas using similar fishing techniques. Under Alternative C4, NMFS would use the same groupings as Alternative C3, but would have a separate hammerhead shark group (in Alternative C3, NMFS grouped hammerhead sharks with other LCS). NMFS used the following rationale for grouping shark species together under Alternative C4:

- *Atlantic sharpnose, bonnethead, and smoothhound sharks*: Anglers could catch Atlantic sharpnose and bonnethead sharks in similar areas using similar fishing techniques. Currently, Atlantic sharpnose, bonnethead, and smoothhound sharks are similarly managed in the recreational shark fishery (i.e., no minimum size limit) and under Alternative C4, these species would continue to have no minimum size limit. Thus, NMFS grouped these species together.
- *Blacknose and finetooth sharks*: Blacknose and finetooth sharks have similar sizes at maturity. Additionally, they look similar and can be very difficult to distinguish. To avoid misidentification during recreational fishing activities, NMFS grouped these species together.
- *Blacktip and spinner sharks*: Blacktip and spinner sharks look similar and can be very difficult to distinguish. To avoid misidentification during recreational fishing activities, NMFS grouped these species together.
- *Great hammerhead, scalloped hammerhead, and smooth hammerhead sharks*: Hammerhead species have similar sizes at maturity. Additionally, they look very similar and distinguishing hammerhead sharks from each other is quite difficult even for the most seasoned fishermen. However, anglers can distinguish hammerhead species easily from other LCS. Thus, NMFS grouped these species together.
- *Bull, lemon, nurse, and tiger sharks*: NMFS grouped these LCS together because most of them have similar sizes at maturity, and anglers could catch them in similar areas using similar fishing techniques.
- *Blue, common thresher, and porbeagle sharks*: NMFS grouped these pelagic shark species together because they have similar sizes at maturity and anglers could catch them in similar areas using similar fishing techniques.

Under Alternative C4, NMFS would set a maximum recreational minimum size limit equal to the status quo minimum size limit (i.e., 54 inches (137.2 cm) FL) for small coastal and smoothhound sharks. For other shark species, NMFS would set a maximum recreational minimum size limit that is approximately 12 inches (30.5 cm) FL longer than the shark species in that group with the longest female size at maturity, with the exception of the two larger LCS groups (i.e., hammerhead (great, scalloped, and smooth) and bull, lemon, nurse and tiger sharks) which would have the same maximum recreational minimum size limits, to simplify the measures for fishermen. For example, blue, common thresher, and porbeagle sharks reach female size at maturity at 73 inches (185.4 cm) FL, 83 inches (210.8 cm) FL, and 82 inches (208.3 cm) FL, respectively. Of the three species in the group, common thresher shark has the longest female size at maturity (83 inches (210.8 cm) FL). Under this alternative, the maximum recreational minimum size limit would be 95 inches (241.3 cm) FL, which is 12 inches (30.5 cm) longer than

the female size at maturity for common thresher shark. This would allow the recreational minimum size limit for a species group to be set equal to, above, or below the female sizes at maturity of the individual species in the group, within the defined minimum size limit range for the group. Additionally, under this alternative, NMFS could remove the recreational minimum size limit for a shark group under certain conditions. The recreational minimum size limit may be adjusted, or removed, to increase or decrease harvest rates, based on relevant factors, such as the landings and landing trends over the past 3 calendar years, the relevant recreational retention limit, and other relevant factors (e.g., health of the stock, new scientific information, and other fishery conditions).

Under Alternative C4, NMFS would revise the default recreational minimum size limits for shark groups where the midpoint value of the female sizes at maturity for the shark species in that group is smaller than the current default recreational retention limit for those species. Thus, under Alternative C4, NMFS would revise the default recreational minimum size limits for the blacknose and finetooth shark group and the blacktip and spinner shark group because their female sizes at maturity are well below the current minimum size limit for these species (i.e., 54 inches (137 cm) FL). Similar to Alternative C3, NMFS selected their default minimum size limits based on a midpoint of the sizes at maturity for the shark species grouped together. A midpoint value would result in a minimum size limit that balances differing sizes at maturity for grouped species while limiting the unintentional harvest of immature individuals of any species in the group.

However, under Alternative C4, NMFS would keep the default recreational minimum size limits for other recreationally authorized shark species consistent with current HMS regulations (§ 635.20(e)). Maintaining the status quo as the default minimum size limit would avoid unnecessarily constraining the recreational shark fishery with higher minimum size limits, given that recreational harvest is low. See Table 2.3 for shark groups and their respective recreational minimum size limit ranges and default minimum size limits under Alternative C4.

Table 2.3 Recreational minimum size limit ranges for shark groups under Alternative C4.

Shark Group	Recreational Minimum Size Limit (FL) (inches (cm))	
	Range	Default
Atlantic sharpnose, bonnethead, and smoothhound	Up to 54 (137.2), or no limit	No limit
Blacknose and finetooth	Up to 54 (137.2), or no limit	38 (96.5)
Blacktip and spinner	Up to 70 (177.8), or no limit	48 (121.9)
Great hammerhead, scalloped hammerhead, and smooth hammerhead	Up to 115 (292.1), or no limit	78 (198.1)
Bull, lemon, nurse, and tiger	Up to 115 (292.1), or no limit	54 (137.2)
Blue, common thresher, and porbeagle	Up to 95 (241.3), or no limit	54 (137.2)

In Amendment 14, NMFS set forth a revised framework for establishing quotas that included, among other things, a method to actively monitor the recreational sector ACLs. In short, if recreational ACLs are established, NMFS could adjust the recreational sector ACLs annually

based on data from the past three years. The most recent three years of data should account for the high variability of recreational harvest and mortality, and would provide an updated representation of the recreational harvest and mortality in the fisheries outside of a stock assessment. In addition to adjusting the ACLs, as needed NMFS could consider management measures to control mortality, such as adjustments to minimum size limits, if needed to account for underharvest and overharvest of the recreational catch. This alternative would allow NMFS to effectively manage the recreational shark fishery by adjusting the minimum size to increase or decrease harvest rates based on updated mortality estimates consistent with the framework established in Amendment 14.

Alternative C5: Remove recreational minimum size limits for sharks.

Under Alternative C5, NMFS would remove recreational minimum size limits for shark species. Thus, recreational HMS permit holders would be able to retain recreationally authorized shark species of any size.

2.2.2 RECREATIONAL RETENTION LIMITS

NMFS is considering three alternatives for retention limits (also known as "bag limits") in the recreational shark fishery.

NMFS is not considering changes to the recreational retention limit for shortfin mako shark in this action. At the start of each fishing year, the default shortfin mako shark retention limit is zero sharks per vessel per trip, consistent with ICCAT Recommendation 21-09.

Recreational retention limits apply to recreational HMS permit holders (those who hold HMS Angling or Charter/Headboat permits, and Atlantic Tunas General category and Swordfish General Commercial permits when participating in a registered HMS tournament).

Alternative D1: Keep the current recreational retention limits for sharks. - No Action

Under Alternative D1, the No Action alternative, NMFS would maintain the current recreational retention limits under HMS regulations (§ 635.22(c)). The current recreational retention limits are as follows:

- One shark from the following list per vessel per trip: Atlantic blacktip, Gulf of America blacktip, bull, great hammerhead, scalloped hammerhead, smooth hammerhead, lemon, nurse, spinner, tiger, blue, thresher, porbeagle, Atlantic sharpnose, finetooth, Atlantic blacknose, Gulf of America blacknose, and bonnethead.
- One Atlantic sharpnose shark and one bonnethead shark per person per trip.
- There is no limit for smoothhound sharks.

For example, if there are three passengers on a trip, the vessel may retain up to three Atlantic sharpnose, three bonnethead, and one other shark (including an additional Atlantic sharpnose or bonnethead shark) for seven sharks total. The vessel may also retain any number of smoothhound sharks.

Alternative D2: Establish flexible recreational retention limits for sharks. - *Preferred Alternative*

Under Alternative D2, the preferred alternative, NMFS would establish flexible recreational retention limits for shark species. Default recreational retention limits would be consistent with current HMS regulations (§ 635.22(c)), with the exception of Atlantic sharpnose, bonnethead and blacktip sharks, which would have separate default recreational retention limits. NMFS would set all recreational retention limits based on a number of sharks per vessel per trip, to simplify regulations and reduce confusion regarding which species have vessel- or person-specific retention limits. Thus, NMFS would no longer manage Atlantic sharpnose and bonnethead sharks under an additional one-shark-per-person-per-vessel recreational retention limit.

Under Alternative D2, NMFS would set maximum recreational retention limits for shark species as shown in Table 2.4. These limits are generally consistent with recreational regulations in state waters of relevant states, which is where the majority of recreational shark catches occur. The recreational retention limit for a given species or group of species may be adjusted within the defined retention limit range for the species or group of species, or removed entirely, to increase or decrease harvest rates, based on the inseason trip limit adjustment criteria listed in § 635.24(a)(8). If a recreational retention limit is removed for a species, or group of species, per the criteria listed in § 635.24(a)(8), there would be no limit to the number of sharks of that species, or group of species, that could be retained per vessel per trip. See Table 2.4 for recreational retention limit ranges, including the default retention limit, for shark species under Alternative D2.

Table 2.4 Recreational retention limit ranges for sharks under Alternative D2.

Shark Species	Recreational Retention Limit (Sharks/Vessel/Trip)	
	Range	**Default**
Sharks from the following list: Blacknose, blue, bull, common thresher, finetooth, great hammerhead, scalloped hammerhead, smooth hammerhead, lemon, nurse, porbeagle, spinner, and tiger	1 to 3, or no limit	1
Atlantic sharpnose	1 to 4, or no limit	1
Bonnethead	1 to 4, or no limit	1
Blacktip	1 to 5, or no limit	1
Smoothhound	1 to 4, or no limit	No limit

As discussed in Alternative C4, NMFS intends in the future to begin actively monitoring and adjusting the recreational sector ACLs. When doing this, as needed, NMFS would consider adjustments to recreational retention limits as necessary and appropriate to control mortality and account for underharvests and overharvests of the recreational sector ACLs. This alternative would allow NMFS to adjust retention limits annually based on updated mortality estimates from the previous three years and more effectively manage the recreational shark fishery. Flexible recreational retention limits would allow NMFS to update the recreational retention limits consistent with the framework established in Amendment 14.

Alternative D3: Remove recreational retention limits for sharks.

Under Alternative D3, NMFS would remove recreational retention limits for shark species. Thus, recreational HMS permit holders would be able to retain an unlimited number of authorized shark species per vessel per trip.

3 Affected Environment

This chapter describes the affected environment (e.g., the fishery, the gears used, the communities involved) and provides a view of the current condition of the fishery, which serves as a baseline against which to compare potential impacts of the different alternatives. This chapter also provides a summary of information concerning the biological status of Atlantic blacknose sharks; the marine ecosystem; the social and economic condition of the fishing interests, fishing communities, and fish processing industries; and the best available scientific information concerning the past, present, and possible future conditions of the shark stocks, ecosystem, and fisheries.

3.1 ATLANTIC HIGHLY MIGRATORY SPECIES SHARK MANAGEMENT

The Secretary of Commerce delegated the authority to manage HMS fisheries to NMFS. The HMS Management Division develops regulations for HMS fisheries within the Office of Sustainable Fisheries. HMS fisheries require management at the international, national, and state levels because of the highly migratory nature of the species involved. For sharks, NMFS generally manages U.S. HMS fisheries in federal waters (domestic) and the high seas (international), while individual states establish regulations in their own waters. However, there are exceptions. For example, as a condition of their permit, federally permitted shark fishermen are required to follow federal regulations in all waters including state waters, unless the state has more restrictive regulations, in which case the state regulations prevail. Additionally, in 2010, the Atlantic States Marine Fisheries Commission implemented an interstate coastal shark FMP. This interstate FMP coordinates management measures among all states along the Atlantic coast (Florida to Maine) and coordinates management activities between state and federal waters to promote complementary regulations throughout the species' ranges. NMFS participated in the development of this interstate shark FMP.

States may send representatives to HMS Advisory Panel meetings and participate in stock assessments, public hearings, and other fora. NMFS continues to work on improving communication and coordination with state agencies and welcomes comments from states about various shark measures. NMFS will share this document with the Atlantic, Gulf of America, and Caribbean states and territories. Additionally, NMFS will collaborate with states and the Atlantic and Gulf States Marine Fisheries Commissions, to the extent practicable, to work toward complementary regulations in state waters.

On the international level, NMFS participates in stock assessments conducted by the Standing Committee Research and Statistics (SCRS) and ICCAT meetings. NMFS implements binding conservation and management measures adopted by ICCAT and through other relevant international agreements, consistent with ATCA and the Magnuson-Stevens Act. ICCAT has assessed blue, shortfin mako, and porbeagle shark stocks, and has conducted several ecosystem risk assessments for various shark species. As described below, in recent years ICCAT has adopted several shark-specific recommendations that address sharks caught in association with ICCAT fisheries.

NMFS also actively participates in other international bodies to collaborate on shark-related conservation and management efforts, including the Convention on International Trade in Endangered Species (CITES) and the Food and Agriculture Organization. The Conference of the Parties to CITES have listed several shark species, including white, basking, oceanic whitetip, porbeagle, silky, and hammerhead sharks, under Appendix II of CITES. Additionally, at the November 2022 Conference of the Parties meeting, CITES members listed all *Carcharhinidae* species (requiem sharks) on Appendix II, effective November 2023. Of the requiem shark species listed, the HMS Management Division manages, and commercial fishermen can retain, Atlantic sharpnose, blacknose, blacktip, blue, bull, lemon, sandbar, and spinner sharks. In November 2022, bonnethead sharks (*S. tiburo*), along with the rest of the non-listed hammerhead shark species, were also listed in Appendix II, based on the similarity in appearance of these species to others in the CITES Appendices. International trade of species listed under Appendix II is monitored and tracked. Dealers wishing to import or export listed shark species must obtain certain permits and follow reporting requirements as established by the U.S. Fish and Wildlife Service.

On December 23, 2022, the James M. Inhofe National Defense Authorization Act for Fiscal Year 2023, P.L. 117-263, which included provisions on shark fins, was signed. The Act provides that, with certain exceptions, "no person shall possess, acquire, receive, transport, offer for sale, sell, or purchase a shark fin or a product containing a shark fin" *Id.* at § 5946(b)(1). Under the Act, "shark fin" is defined to mean "the unprocessed, dried, or otherwise processed detached fin or tail of a shark." *Id*. at § 5946(b)(8). Exceptions are in place for smooth or spiny dogfish fins. Additional details about the direct and indirect effects of factors such as bans on the sale of shark fins in the United States are available in the SHARE document.

3.1.1 DOMESTIC SHARK MANAGEMENT

This section provides a brief history of Atlantic shark fisheries management. For more information on NMFS' HMS Management Division's complete management history as it relates to sharks, please refer to the HMS FMP and Amendments 2, 3, 5a, 5b, 6, 9, 11, 14, and 16 (scoping) to the HMS FMP. Relevant proposed rules, final rules, and other official notices are also in the *Federal Register*.[4] Supporting documents, including the original FMPs, are available on the HMS Management Division's webpage.[5] Call the HMS Management Division at 301-427-8503 to request copies of any documents.

The HMS Management Division manages 42 shark species based upon conservation and management needs. According to fishery dynamics, NMFS divided these sharks into five species groups or complexes for management purposes: (1) LCS, (2) SCS, (3) pelagic sharks, (4) prohibited species, and (5) smoothhound sharks (Table 3.1).

[4] The *Federal Register* is available here: https://www.federalregister.gov/.
[5] The HMS Management Division webpage is available here: https://www.fisheries.noaa.gov/topic/atlantic-highly-migratory-species.

Table 3.1 Common names of shark species included within the five species complexes.

Species Complex	Shark Species Included
Large Coastal Sharks (11)	Atlantic and Gulf of America blacktip^, bull^, great hammerhead*^, lemon^, nurse, sandbar+^, scalloped hammerhead*°^, silky*^, smooth hammerhead*^, spinner^, and tiger sharks
Small Coastal Sharks (4)	Atlantic and Gulf of America Atlantic sharpnose^, Atlantic and Gulf of America blacknose^, Atlantic and Gulf of America bonnethead^, and finetooth sharks
Pelagic Sharks (4)	Blue^, common thresher, porbeagle^, and shortfin mako^ sharks
Prohibited Species (20)	Atlantic angel, basking^, bigeye sand tiger, bigeye sixgill, bigeye thresher, bignose, Caribbean reef^, Caribbean sharpnose^, dusky^, Galapagos^, longfin mako^, narrowtooth, night^, oceanic whitetip^**sand tiger, sevengill, sixgill, smalltail^, whale^, and white^ sharks
Smoothhound Sharks (3)	Smooth dogfish`, Florida smoothhound, and Gulf smoothhound sharks

Note: Retention of certain sharks varies depending on permits, region, gears, and other requirements.
+ Prohibited from retention with the exception of vessels selected to participate in the shark research fishery.
* Prohibited from commercial retention on pelagic longline gear and recreationally if swordfish, tunas, and/or billfish are retained.
^ Listed under CITES Appendix II.
° Distinct Population Segment in the central and southwest Atlantic Ocean listed as threatened under the ESA.
** Listed as threatened throughout its range under the ESA.
` Exempt from the Shark Fin Sales Elimination Act.

3.1.2 STATE REGULATIONS

Please refer to Chapter 1 of the HMS Stock Assessment and Fishery Evaluation (SAFE) Report for the existing regulations in the Atlantic, Gulf of America, and Caribbean states and territories, as of October 20, 2022, with regard to shark species. While the HMS Management Division updates Table 1.3 periodically, persons interested in the current regulations of any state should contact each state directly.

3.1.3 INTERNATIONAL SHARK MANAGEMENT

ICCAT recommendations are binding instruments for Contracting Parties, while ICCAT resolutions are non-binding and express the will of the Commission.[6] Under ATCA, NMFS is required to promulgate regulations as necessary and appropriate to implement binding ICCAT measures. Generally, ICCAT manages fisheries for tuna and tuna-like species and bycatch in those fisheries, but also conducts research and has adopted measures related to shark species caught in association with ICCAT fisheries.

3.1.4 ATLANTIC SHARK STOCK STATUS

The stock status determination criteria, thresholds used to determine the stock status, and information on the stock status for shark species are presented in Chapter 2 of the HMS SAFE

[6] All ICCAT recommendations and resolutions are available on the ICCAT website at http://www.iccat.int.

Report. Generally, SEDAR conducts shark stock assessments, including those for LCS and SCS.[7] ICCAT's SCRS typically conducts stock assessments for pelagic sharks, and has assessed blue, shortfin mako, and porbeagle sharks.[8]

In 2023, in Amendment 14, NMFS established multi-year overfishing status determination criteria that would allow NMFS to update the overfishing status of a shark stock between stock assessments, consistent with National Standard 1. Outside of an assessment year, NMFS would compare a three-year rolling average of catch to the average overfishing limit to determine overfishing status. Using a multi-year approach to determine overfishing status outside of an assessment year, in appropriate cases, can be effective to protect the stock (by providing a more accurate status) and allow for management that is more responsive. NMFS would not use these criteria to determine if a stock is overfished; the overfished status must be determined through the stock assessment process.

SEDAR first assessed blacknose sharks in 2007 (SEDAR 13). Consequently, NMFS determined that the stock was overfished and overfishing was occurring. SEDAR completed the most recent stock assessment for blacknose sharks in 2010 (SEDAR 21). This assessment identified two separate blacknose shark stocks, one in the Atlantic and one in the Gulf of America. Consequently, NMFS determined that the Atlantic stock of blacknose sharks was overfished and overfishing was occurring and the Gulf of America stock of blacknose sharks had an unknown overfished status and an unknown overfishing status.

3.1.5 BIOLOGY AND LIFE HISTORY

As described in more detail in Chapter 3 of Amendment 6, sharks have a low reproductive potential compared to many other fish, increasing their vulnerability to overfishing. See below for various life history parameters for Atlantic blacknose sharks. Additionally, see Table 3.2 for the female size at maturity for recreationally authorized shark species.

Atlantic Blacknose Sharks

The blacknose shark is a small coastal shark species (approximately 101 cm maximum FL) with two separate stocks defined: one in the Atlantic region, and one in the Gulf of America region (NMFS 2011a). Varying migration patterns have been observed for individuals from the Atlantic stock. Throughout the year, this species is generally observed in coastal waters, possibly migrating offshore during the winter (Driggers et al. 2010). Migration to the north, off the coasts of North and South Carolina, and then to the south, off Florida's east coast is observed in a portion of the stock (Kohler and Turner, 2019). However, some individual adult sharks have been shown to remain throughout the year off the coast of Florida (Bangley and Rulifson 2017; Kohler and Turner 2019; Peterson and Grubbs 2020; Williams et al. 2019).

The age at 50 percent maturity for Atlantic blacknose shark is 4.5 years for females and 4.3 years for males (Driggers et al. 2010), with a maximum age of 14.5 years for females and 20.5 years

[7] All SEDAR reports are available online at http://sedarweb.org/sedar-projects.
[8] All SCRS final stock assessment reports are on the ICCAT website at https://www.iccat.int/en/assess.html.

for males (NMFS 2011a, Frazier et al. 2015). Females have a gestation period of 10 months, and produce litters that range in size from one to five pups (Driggers et al. 2004; Driggers et al. 2010; SEDAR, 2011a). Biennial reproductive cycles have been observed for females in the South Atlantic Bight (SEDAR, 2011b).

In recent years, along the east coast of the United States in the Atlantic Ocean, scientists are finding that the range of blacknose sharks has been moving northward. The NMFS Cooperative Shark Tagging Program (1962 through 2013) tagged almost 3,000 blacknose sharks (Kohler and Turner, 2019). While the vast majority were tagged from southern Florida through North Carolina, a few were tagged off the coast of Maryland (Kohler and Turner, 2019). In the Virginia Shark Monitoring and Assessment Program, 51 blacknose sharks were encountered in bottom longline survey sets off the coast of Virginia between 1990 and 2018 (Latour and Gartland, 2020). Latour and Gartland (2020) noted that encounter rates increased from 15.4 percent before 2003 to 31.3 percent after 2003; they believed this increase in encounter rates was the result of a distributional shift in the blacknose stock driven by changing water temperature. Furthermore, Diaz-Carballido et al. (2022) used four different future climate models to model the potential shift in range for Atlantic blacknose and other Carcharhinid sharks. They found that, in general, sharks in the Atlantic are likely to increase their range northward by the year 2050.

Atlantic Shark Species

See Table 3.2 for the female size of maturity for the shark species authorized for retention in the recreational shark fishery.

Table 3.2 Female size at maturity for authorized species in the recreational shark fishery.

Shark Species	Region/Stock	Female Size at Maturity (FL) (inches (cm))[1]	Reference
Atlantic sharpnose	Atlantic	24 (61)	SEDAR 34 Stock Assessment Report (NMFS 2013)
	Gulf of America	25 (63.5)	SEDAR 34 Stock Assessment Report (NMFS 2013)
Blacknose	Atlantic	36 (91.4)	SEDAR 21 Data Workshop Working Paper (NMFS 2011b)
	Gulf of America	32 (81.3)	Hendon et al. 2014
Blacktip	Atlantic	48 (121.9)	SEDAR 65 Stock Assessment Report (NMFS 2020)
	Gulf of America	47 (119.4)	Baremore & Passerotti 2013
Blue	North Atlantic	73 (185.4)[4]	Viducic et al. 2021
Bonnethead	Atlantic	32 (81.3)	Frazier et al. 2014
	Gulf of America	26 (66)	Frazier et al. 2014
Bull	All	75 (190.5)[2]	Branstetter and Stiles 1987
Common thresher	All	83 (210.8)[4]	Natanson and Gervelis 2013
Finetooth	Atlantic	41 (104.1)	Vinyard et al. 2019
	Gulf of America	39 (99.1)	Higgs et al. 2020
Hammerhead, great	All	81 (205.7)	SEDAR 77 Stock Assessment Workshop Report (NMFS 2023)
Hammerhead, scalloped	All	72 (182.9)	SEDAR 77 Stock Assessment Workshop Report (NMFS 2023)
Hammerhead, smooth	All	79 (200.7)	SEDAR 77 Stock Assessment Workshop Report (NMFS 2023)
Lemon	All	76 (193)[2]	Compagno 1984; Castro 2011
Nurse	All	89 (226.1)[3]	Castro 2000
Porbeagle	All	82 (208.3)[4]	Jensen et al. 2002
Smoothhound	Atlantic	40 (101.6)	SEDAR 39 Stock Assessment Report (NMFS 2015)
	Gulf of America	30 (76.2)	SEDAR 39 Stock Assessment Report (NMFS 2015)
Spinner	All	59 (149.9)	Branstetter 1987
Tiger	All	103 (261.4)	Natanson et al. 2022

[1] Female size at maturity is represented as length at 50 percent maturity (L50).

[2] Female size at maturity for these species were recorded in their source material as TL. For management purposes, NMFS converted these measurements to FL.

[3] Size at maturity for nurse sharks is listed here as TL. There is no well-defined fork in the tail for nurse sharks; accordingly, NMFS deemed TL an appropriate measurement for management purposes.

[4] NMFS converted over-the-body FL from the source to straight-length FL.

3.1.6 HABITAT

The Magnuson-Stevens Act requires NMFS to identify and describe EFH for each life stage of managed species (16 U.S.C. § 1855(b)(1)) and to evaluate the potential adverse effects of fishing activities on EFH, including the cumulative effects of multiple fisheries activities (§ 600.815). NMFS originally described and identified EFH and related EFH regulatory elements for all HMS in the management unit in 1999, and updated some in 2003 via Amendment 1. Amendment 10 updated EFH boundaries published in the 1999 FMP and Amendment 1. The EFH Mapper is an interactive tool for viewing important habitats where fish species spawn, grow, and live and is available online.[9]

As described in Amendment 10, EFH for Atlantic blacknose sharks includes coastal areas within 90 meters from shore along the Atlantic east coast from Cape Hatteras, North Carolina to the mid-coast of Florida. Seasonal distribution in coastal waters from Cape Lookout to Holden Beach, North Carolina and South Carolina nearshore waters is correlated with temperatures of 17 to 30° Celsius. EFH includes higher salinity nearshore habitats (34-55 parts per million) off South Carolina.

NMFS recently announced their intent to initiate Amendment 17 to the HMS FMP to update HMS EFH descriptions and designations, following completion of the Final HMS EFH 5-Year Review (89 FR 27716, April 18, 2024). The HMS EFH 5-Year Review identified recent studies that support updating EFH for Atlantic blacknose sharks. NMFS will announce any changes to EFH for Atlantic blacknose sharks in Amendment 17 to the HMS FMP.

3.2 DESCRIPTION OF THE FISHERY

3.2.1 ATLANTIC SHARK PERMITS, RETENTION LIMITS, AND ECONOMIC ASPECTS

While shark fishermen generally target particular species, the non-selective nature of many fishing gears warrants analysis and management on a gear-by-gear basis. For this reason, NMFS typically analyzes shark fishery data by gear type. Additionally, analyses by gear type better address bycatch and safety issues.

Authorized gear types routinely used in Atlantic shark fisheries include:

- Pelagic longline fishery - longline (commercial);
- Shark bottom longline fishery - longline (commercial);
- Shark gillnet fishery - gillnet (commercial);
- Shark handgear fishery - rod and reel, handline, bandit gear (commercial); and
- Shark recreational fishery - rod and reel, handline (recreational).

In most of the Atlantic, a Directed or Incidental shark LAP is required to commercially harvest sharks other than smoothhound sharks. Under the HMS LAP program, the agency is no longer issuing new commercial permits. Commercial vessels issued a Directed or Incidental shark LAP

[9] The EFH Mapper is available at https://www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper.

are authorized to use pelagic longline or bottom longline gear, handgear, and gillnet gear. Permit holders must also become certified at a Safe Handling, Release, and Identification Workshop if fishing longline or gillnet gear, and these fishermen can sell only to a federally-permitted shark dealer. The current shark retention limit for commercial vessels issued a Directed shark LAP ranges from 0 to 55 LCS; there is no limit on SCS (except no more than 8 blacknose sharks) and pelagic sharks. Commercial vessels issued an Incidental shark LAP can retain 3 LCS and a total of 16 SCS and pelagic sharks combined (except no more than 8 blacknose sharks). The majority of sharks landed in HMS fisheries are landed by commercial vessels issued a Directed shark LAP using bottom longline, gillnet, or rod and reel gear.

The commercial retention limit for LCS may be adjusted during the fishing year after considering the inseason trip limit adjustment criteria at § 635.24(a)(8); currently, none of the other shark retention limits may be adjusted. The inseason trip limit adjustment criteria are:

1) The amount of remaining shark quota in the relevant area, region, or sub-region, to date, based on dealer reports;
2) The catch rates of the relevant shark species/complexes in the region or sub-region, to date, based on dealer reports;
3) Estimated date of fishery closure based on when the landings are projected to reach 80 percent of the quota given the realized catch rates and whether they are projected to reach 100 percent before the end of the fishing season;
4) Effects of the adjustment on accomplishing the objectives of the HMS FMP and its amendments;
5) Variations in seasonal distribution, abundance, or migratory patterns of the relevant shark species based on scientific and fishery-based knowledge;
6) Effects of catch rates in one part of a region or sub-region precluding vessels in another part of that region or sub-region from having a reasonable opportunity to harvest a portion of the relevant quota; and/or
7) Any shark retention allowance set by ICCAT, the amount of remaining allowance, and the expected or reported catch rates of the relevant shark species, based on dealer and other harvest reports.

Based on eDealer data from 2017 through 2022, in the Atlantic region, 82,550 pounds (lb) dressed weight (dw) of blacknose sharks were landed commercially (Table 3.3).

Table 3.3 Commercial landings (lb dw) of blacknose sharks in the Atlantic region, 2017-2022.

Management Group	2017	2018	2019	2020	2021	2022
Blacknose	17,241	11,335	18,910	10,644	15,056	9,364

Source: eDealer.

Fishermen may fish recreationally for sharks with handline or rod and reel gear, if they hold a shark endorsement along with an HMS Angling or HMS Charter/Headboat permit, or – only if participating in a registered HMS tournament – an Atlantic Tunas General category or Swordfish General Commercial permit. Obtaining a shark endorsement requires completing an online shark identification and fishing regulation training course and quiz. HMS permit holders without a

shark endorsement that incidentally hook a shark while fishing for other species are required to release the shark immediately, in a manner that will ensure maximum probability of survival of the fish, and without removing it from the water. The current recreational retention limit is one shark from the following list per vessel per trip: Atlantic blacktip, Gulf of America blacktip, bull, great hammerhead, scalloped hammerhead, smooth hammerhead, lemon, nurse, spinner, tiger, blue, common thresher, porbeagle, Atlantic sharpnose, finetooth, Atlantic blacknose, Gulf of America blacknose, and bonnethead. Additionally, there is a one-shark-per-person-per-trip limit for Atlantic sharpnose and bonnethead. There is no recreational retention limit for smoothhound sharks. See Tables 3.4 and 3.5 for recreational landings of coastal sharks by region from 2017 through 2022.

Table 3.4 Estimated recreational harvest (numbers) of coastal sharks, 2017-2022.

Large Coastal Sharks							
Species	**Region/Stock**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Blacktip	Atlantic	1,527	500	224	1,506	486	1,503
	Gulf of America	21,635	17,777	5,725	15,012	17,271	4,244
Bull	Atlantic	3,750	32	-	17	-	1
	Gulf of America	3,373	5,945	1,993	2,283	631	304
Hammerhead, great	Atlantic	-	-	1	5	-	1
	Gulf of America	-	-	-	36	2	-
Hammerhead, scalloped	Atlantic	-	-	1	-	-	-
	Gulf of America	58	30	3	1	7	50
Hammerhead, smooth	Atlantic	-	-	-	-	-	-
	Gulf of America	-	-	-	-	-	-
Lemon	Atlantic	764	-	4	-	217	11,796
	Gulf of America	-	47	-	-	-	146
Nurse	Atlantic	2	5	13	2	1	29,595
	Gulf of America	2,282	1	-	-	1	1
Spinner	Atlantic	623	153	66	27	61,229	287
	Gulf of America	4,711	6,050	3,290	2,402	2,033	772
Tiger	Atlantic	-	1	-	-	1	-
	Gulf of America	3	1	2	4	24	-
Requiem shark, unclassified	Atlantic	625	7,544	83,129	37,790	384	14,146
	Gulf of America	13,504	1,136	12,703	473	6,878	15,092
Small Coastal Sharks							
Species	**Region**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Blacknose	Atlantic	13	13	83	661	1,855	1,105

	Gulf of America	2,487	17,358	406	156	3	14,589
Bonnethead	Atlantic	18,239	37,168	31,086	28,861	34,840	15,309
	Gulf of America	20,663	117,831	20,305	25,808	48,703	53,077
Finetooth	Atlantic	1,219	-	176	113	166	1,476
	Gulf of America	2,560	3,910	101	501	172	123
Atlantic sharpnose	Atlantic	38,784	24,468	40,144	34,256	72,251	18,248
	Gulf of America	71,719	51,140	25,452	12,045	11,983	39,220
Smoothhound Sharks							
Species	**Region**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Smooth dogfish	Atlantic	60,428	40,736	56,375	61,129	37,535	17,549
Smooth dogfish, Florida smoothhound, and Gulf smoothhound	Gulf of America	-	-	-	-	1	9

Note: A "-" indicates that species were not reported.
Source: Southeast Region Headboat Survey, Marine Recreational Information Program (MRIP) (FES/Access Point Angler Intercept Survey (APAIS) calibrated), Texas Parks & Wildlife Department, and Louisiana Recreational Creel Survey.

Table 3.5 Estimated recreational harvest (mt whole weight) of pelagic sharks, 2017-2022.

Species	2017	2018	2019	2020	2021	2022
Blue	21.9	15.2	16.7	8.4	9.3	0.0
Common thresher	92.0	96.6	108.8	54.1	3.3	1.5
Oceanic whitetip	-	-	<0.1[1]	-	<0.1[1]	-
Porbeagle	7.7	2.8	11.8	4.9	1.2	0.4
Shortfin mako[2]	192.4	125.1	25.2	24.5	21.8	28.7

Note: A "-" indicates that species were not reported.
[1] 2019 and 2021 each saw a single report of a landed oceanic whitetip shark reported to the Southeast Region Headboat Survey, accounting for less than 0.1 mt.
[2] As of July 2022, the shortfin mako shark retention limit in all commercial and recreational HMS fisheries is zero (87 FR 39373, July 1, 2022).
Source: Large Pelagics Survey (LPS), MRIP, Southeast Region Headboard Survey, Louisiana Recreational Creel Survey, Texas Parks & Wildlife Department.

3.3 FISHERY PARTICIPANTS

In order to understand the scope of potential effects of this action on relevant permit holders, NMFS analyzed the number of vessels and dealer permits issued. As of October 2023, there were 188 Directed shark LAPs and 221 Incidental shark LAPs. As of December 2023, there were

4,324 HMS Charter/Headboat permits (with 3,085 shark endorsements and 2,014 commercial sale endorsements), 24,552 HMS Angling permits (with 12,840 shark endorsements), and 3,471 Atlantic Tunas General category and Swordfish General Commercial permits (with 1,709 shark endorsements). For more information regarding the distribution of these permits across states and territories, please see the HMS SAFE Report.

3.4 ECONOMIC ENVIRONMENT

From 2019 through 2022, the total annual revenue for shark fisheries has remained depressed in comparison with revenues observed in previous years. Revenues for Atlantic blacknose sharks have varied. Additionally, in December 2022, the Shark Fin Sales Elimination Act made it is illegal to offer for sale, sell, or purchase a shark fin, with certain exceptions. Therefore, the economic data presented in this document only account for shark meat price and revenue; NMFS did not include shark fin information. Table 3.6 shows average ex-vessel prices and total revenue from blacknose sharks from 2017 through 2022. Table 3.7 shows median input costs for bottom longline vessel trips from 2017 through 2022. For more information on the overall economic status of HMS fisheries, please see Chapter 8 of the HMS SAFE Report.

Table 3.6 Average blacknose shark ex-vessel price per pound (U.S. dollars), total blacknose shark ex-vessel annual revenue, and total shark ex-vessel annual revenue, 2017-2022.

Management Group	2017	2018	2019	2020	2021	2022
Blacknose Shark	$1.24	$1.40	$1.44	$1.44	$1.57	$1.38
Annual Total Revenue for Blacknose Sharks	$46,984	$52,926	$54,643	$54,766	$59,690	$52,331
Annual Total Revenue for Shark Fisheries	$3,293,741	$3,437,624	$2,587,066	$2,484,659	$2,810,953	$2,229,904

Note: Given the inflation that has recently occurred, NMFS adjusted all prices to REAL 2022 dollars using the Gross Domestic Product Deflator.
Source: eDealer.

Table 3.7 Median input costs (U.S. dollars) for bottom longline vessel trips, 2017-2022.

Input Costs	2017	2018	2019	2020	2021	2022
Fuel	$124	$156	$144	$120	$109	$215
Bait	$60	$50	$100	$60	$73	$35
Ice Costs	$36	$20	$24	$30	$41	$30
Grocery Expenses	$20	$20	$10	$50	$30	$0
Other Trip Costs	$20	$0	$20	$52	$50	$103

Source: United Data Processing.

3.5 ENDANGERED SPECIES ACT AND MARINE MAMMAL PROTECTION ACT

The ESA is the primary federal legislation governing interactions between fisheries and species listed as threatened or endangered and effects on ESA-listed critical habitat. Through a

consultation process, the ESA requires federal agencies to evaluate actions they authorize, fund, or carry out that may affect a listed species. In the case of marine fisheries, NMFS Office of Sustainable Fisheries consults with the Office of Protected Resources to determine what effects fishery management actions could have on threatened or endangered marine species and what actions the agency can take to reduce or eliminate negative effects. Under the ESA Section 7 consultation process, if a federal agency determines its action is likely to adversely affect a species, or destroy or adversely modify critical habitat, the agency engages in formal consultation with NMFS. At the conclusion of formal consultation, NMFS issues a Biological Opinion that analyzes the effects of the action. If NMFS concludes that the action will jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat, NMFS specifies Reasonable and Prudent Alternatives to the proposed action. If NMFS concludes that the action will not jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat, NMFS specifies Reasonable and Prudent Measures and Terms and Conditions to mitigate the effects of the action and authorizes any allowable "incidental take" of the species.

In May 2020, NMFS issued a Biological Opinion for the Atlantic HMS non-pelagic longline fisheries. This Biological Opinion stated that the continued operation of HMS fisheries is not likely to jeopardize the continued existence of sea turtles, sawfish, Atlantic sturgeon, scalloped hammerhead sharks (Central and Southwest Atlantic Distinct Population Segment), oceanic whitetip sharks, and giant manta ray. NMFS does not anticipate that this action would affect the above-referenced ESA-listed species in any way not previously analyzed for existing regulations, including the provision for exempted fishing activities, and there is no new information that would alter this conclusion.

The MMPA established a national policy to prevent marine mammal species and population stocks from declining beyond the point where they ceased to be significant functioning elements of the ecosystems of which they are a part. The MMPA prohibits, with certain exceptions, the "take" of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the United States. The HMS shark gillnet fishery is listed as a Category II fishery, which means it has an occasional likelihood of seriously injuring or killing marine mammals. The HMS bottom longline and recreational fisheries are listed as Category III fisheries, which means they have a remote likelihood of seriously injuring or killing marine mammals. Commercial vessel owners or operators, or fishermen, in Category II or III fisheries must report all incidental mortalities and 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). NMFS does require reporting and authorizes takes by charter/headboat fishermen (considered "commercial" by MMPA).

Please refer to Sections 3.8 and 3.9.9 of the HMS FMP and Chapter 6 of the HMS SAFE Report for additional information on the protected species and marine mammals in the area of HMS fisheries.

4 Environmental Consequences of Alternatives

As described earlier, NMFS developed various alternatives in this EA to consider removing the blacknose shark management boundary in the Atlantic region, modifying the commercial retention limit for blacknose sharks in the Atlantic region, revising the recreational minimum size limits for Atlantic shark species, and revising the recreational retention limits for Atlantic shark species.

4.1 IMPACTS OF ALTERNATIVES FOR THE BLACKNOSE SHARK MANAGEMENT BOUNDARY IN THE ATLANTIC REGION

In order to meet the objectives stated in Chapter 1, NMFS is analyzing two alternatives for the blacknose shark management boundary in the Atlantic region: maintaining the status quo and removing the blacknose shark management boundary.

4.1.1 ECOLOGICAL EVALUATION

Alternative A1 – No Action

Under Alternative A1, the No Action alternative, NMFS would continue management based on the current blacknose shark management boundary in the Atlantic region. Under this alternative, blacknose sharks may only be commercially harvested south of 34°00' N. lat. (approximately at Wilmington, North Carolina). Blacknose sharks may not be retained north of 34°00' N. lat. NMFS originally implemented this management boundary under Amendment 6 in order to, in part, keep the non-blacknose SCS fishery open if there is available quota. The blacknose and non-blacknose SCS fisheries are linked management groups, which means that both fisheries close when either quota is reached. At the time, the blacknose shark quota was small and a high volume of blacknose shark landings were leading to early closures of these fisheries. The blacknose shark management boundary allowed the non-blacknose SCS fishery to remain open, north of 34°00' N. lat., regardless of blacknose shark landings. Maintaining the blacknose shark management boundary is not expected to have any effect on the current level of fishing, catch rates, or distribution of fishing effort for blacknose sharks.

However, as blacknose shark migratory patterns continue to expand northward in the Atlantic region (i.e., north of the current blacknose shark management boundary), maintaining the blacknose shark management boundary may have effects on blacknose sharks. The Southeast Fisheries Science Center Observer Program data indicate that there were 109 blacknose interactions from 2017 through 2022, all of which occurred south of 34°00' N. lat. The Northeast Fisheries Science Center Observer Program data indicate that, during that same time, there were 127 observed interactions with blacknose sharks, most of which occurred north of 34°00' N. lat. The latter is evidence that further supports the extension of the blacknose shark population further northward along the Atlantic coast. While the management boundary may provide additional protections to blacknose sharks from reduced fishing pressure, fishermen will likely catch them as they fish for other species north of 34°00' N. lat. If blacknose sharks continue to migrate north and fishermen operating north of 34°00' N. lat. interact with them at increasing

rates, maintaining the management boundary may increase the number of blacknose sharks discarded dead. These dead discards are more likely to occur if fishermen who catch blacknose sharks cannot retain them under their existing fishing permit(s) and they are dissuaded from obtaining an applicable fishing permit due to the management boundary. Therefore, Alternative A1 would likely result in neutral short-term and neutral to minor beneficial long-term ecological impacts for Atlantic blacknose sharks.

Alternative A2 – Preferred Alternative

Under preferred Alternative A2, NMFS would remove the blacknose shark management boundary in the Atlantic region. This would allow blacknose sharks to be harvested in the entire Atlantic region under the existing blacknose shark commercial quota (i.e., 37,921 lb dw (17.2 mt dw)). Removing the blacknose shark management boundary and allowing the commercial harvest of blacknose sharks in the entire Atlantic region would better account for the current extent of the Atlantic blacknose shark stock distribution. As described above, there is increasing evidence of the blacknose shark population extending north of 34°00' N. lat. and of interactions between fishermen targeting other species and blacknose sharks. If the blacknose shark management boundary is removed, Directed and Incidental shark LAP holders operating north of 34°00' N. lat. could retain blacknose shark catch rather than releasing them as dead discards. Preferred Alternative A2 may result in some shifts in the current level of fishing, catch rates, or distribution of fishing effort on blacknose sharks, because fishermen north of 34°00' N. lat. would be able to commercially harvest blacknose sharks. However, because the quota would not change, and there are no different or unique ecological characteristics north of 34°00' N. lat. that would change the analysis of ecological impacts, ecological impacts would be within those previously analyzed. NMFS last updated the blacknose shark commercial quota in 2015 when the blacknose shark management boundary was established in Amendment 6.

In 2010, NMFS determined the Atlantic stock of blacknose sharks was overfished, with overfishing occurring. In 2013, NMFS established a rebuilding plan for Atlantic blacknose sharks with a 70 percent probability to rebuild by 2043. When the blacknose shark management boundary was established in 2015, the management boundary was intended, in part, to end overfishing of Atlantic blacknose sharks. NMFS has not reassessed the status of Atlantic blacknose sharks since the 2010 stock assessment. However, NMFS established the existing blacknose shark commercial quota consistent with the rebuilding plan, and in recent years, landings of blacknose sharks have decreased and the quota has not been fully harvested. More information on the stock status of Atlantic blacknose sharks is in Chapters 1 and 3.

Considering the blacknose shark commercial quota would not change, preferred Alternative A2 would likely result in short- and long-term neutral ecological impacts.

4.1.2 SOCIAL AND ECONOMIC IMPACTS

Alternative A1 - No Action

Under Alternative A1, the No Action alternative, NMFS would continue management based on the current blacknose shark management boundary in the Atlantic region. Under this alternative,

vessels issued a Directed or Incidental shark LAP may only harvest blacknose sharks south of 34°00’ N. lat. (approximately at Wilmington, North Carolina). Retaining blacknose sharks would not be allowed north of 34°00’ N. lat.

When the blacknose shark management boundary was established in 2015, the management boundary was intended, in part, to keep the non-blacknose SCS fishery open if there is available quota. The blacknose and non-blacknose SCS fisheries are linked management groups, which means that both fisheries close when either quota is reached. At the time, the blacknose shark quota was small and a high volume of blacknose shark landings were leading to early closures of these fisheries. The blacknose shark management boundary allowed the non-blacknose SCS fishery to remain open, north of 34°00’ N. lat., regardless of blacknose shark landings. However, in recent years, landings of both blacknose and non-blacknose SCS have decreased and neither fishery has closed early nor has either quota been fully harvested. From 2017 through 2022, the commercial fleet earned an annual average of $19,294 in revenue from blacknose shark meat. During the same time, the blacknose shark quota has been under harvested (quota utilization never exceeded 50 percent). See Table 4.1 for blacknose shark landings compared to the annual quota, the percent of quota utilized, and average ex-vessel prices and average annual gross revenues from 2017 through 2022.

Alternative A1 would likely result in neutral short-term and minor adverse long-term social and economic impacts because shark fishing would continue to operate under current conditions. Maintaining the blacknose shark management boundary would unnecessarily restrict fishing opportunities and would not facilitate full utilization of the blacknose shark quota, nor would it allow optimum yield to be harvested. Additionally, commercial fishermen operating north of 34°00’ N. lat. would be required to discard any blacknose shark catch, and therefore would have a missed opportunity to earn revenue from their catch. Given blacknose sharks appear to be moving northward, these discards are likely to occur increasingly often. An increase in blacknose sharks that are caught and discarded north of 34°00’ N. lat. would also decrease the amount of other fish that can be harvested by commercial fishermen, because blacknose sharks would take up the fishing gear, and fishermen would need to dedicate time to properly release live blacknose sharks. Therefore, commercial fishermen would incur efficiency and opportunity costs if unable to retain blacknose shark catch. Furthermore, large discards would likely cause minor adverse social impacts because other fishermen and consumers might view shark fishermen as being wasteful.

Table 4.1 Commercial blacknose shark landings, quota, percent of quota utilized, ex-vessel prices, and average annual gross revenues, 2017-2022.

Year	Landings (mt dw (lb dw))	Quota (mt dw (lb dw))	Percent of Quota Utilized	Average Ex-Vessel Price (U.S. dollars)	Average Annual Gross Revenue (U.S. dollars)
2017	7.8 (17,241)	17.2 (37,921)	45.5	$1.24	$21,379
2018	5.1 (11,335)	17.2 (37,921)	29.9	$1.40	$15,869
2019	8.6 (18,910)	17.2 (37,921)	49.9	$1.44	$27,230
2020	4.8 (10,644)	17.2 (37,921)	28.1	$1.44	$15,327
2021	6.8 (15,056)	17.2 (37,921)	39.7	$1.57	$23,638
2022	4.2 (9,364)	17.2 (37,921)	24.7	$1.38	$12,922
Average	6.2 (13,758)	17.2 (37,921)	36.3	$1.41	$19,294

Source: eDealer.

Alternative A2 – Preferred Alternative

Under preferred Alternative A2, NMFS would remove the blacknose shark management boundary in the Atlantic region. Vessels issued a Directed or Incidental shark LAP would be allowed to harvest blacknose sharks in the entire Atlantic region under the existing blacknose shark commercial quota (i.e., 37,921 lb dw (17.2 mt dw)).

As described in Alternative A1, the blacknose shark management boundary may no longer be relevant given its original intent to keep the non-blacknose SCS fishery open if there is available quota. The Atlantic blacknose shark commercial quota fishery has been under harvested for several years, and there is increasing evidence of range expansion northward along the Atlantic coast. From 2017 through 2022, the commercial fleet earned an average of $19,394 in revenue from blacknose sharks, and during that same time, the commercial fleet utilized on average only 36.3 percent of the quota (Table 4.1). Based on the average ex-vessel price during that time ($1.41), fully harvesting the blacknose shark commercial quota could result in an estimated annual total fleet revenue of $53,532. Therefore, there is an average of $34,138 in unrealized revenue per year.

Furthermore, in Amendment 14, NMFS selected a management option that would remove commercial management group quota linkages (see Amendment 14, pages 34-35). The removal of commercial management group quota linkages would allow fisheries to remain open all year to ensure that each shark management group or species quota is fully utilized. Thus, the blacknose shark management boundary would no longer be needed to ensure the non-blacknose SCS fishery remains open when there is available quota, should the blacknose shark quota be reached. The regulations for Amendment 14, as it relates to the removal of commercial management group quota linkages, would be implemented through this action.

Removing the blacknose shark management boundary in the Atlantic region would create an opportunity for Directed and Incidental shark LAP holders to earn additional revenue from blacknose shark catch, and would facilitate full utilization of the available blacknose shark quota. Additionally, the removal of commercial management group quota linkages, consistent with

Amendment 14 and as implemented through this action, may make the blacknose shark management boundary irrelevant. Therefore, preferred Alternative A2 would likely result in short- and long-term neutral to minor beneficial social and economic impacts.

4.2 IMPACTS OF ALTERNATIVES FOR THE ATLANTIC BLACKNOSE SHARK COMMERCIAL RETENTION LIMIT

In order to meet the objectives stated in Chapter 1, NMFS is analyzing three alternatives for the blacknose shark commercial retention limit in the Atlantic region for vessels issued a Directed shark LAP: maintaining the status quo; establishing a flexible commercial retention limit of 0 to 60 sharks, with a default retention limit of 25 sharks; and removing the commercial retention limit.

4.2.1 ECOLOGICAL EVALUATION

Alternative B1 – No Action

Under Alternative B1, the No Action alternative, the commercial retention limit would continue to be eight blacknose sharks per vessel per trip for all Directed shark LAP holders in the Atlantic region. Maintaining the current commercial retention limit for blacknose sharks is not expected to have any effect on the current level of fishing, catch rates, or distribution of fishing effort for blacknose sharks. However, because the blacknose shark commercial quota is currently under harvested, Alternative B1 could provide additional protections to the stock and result in an increasing Atlantic blacknose shark population. Conversely, because blacknose shark migratory patterns may continue to expand northward in the Atlantic region, interactions between fishermen and blacknose sharks could likely increase and result in an increase in dead discards. Alternative B1 would likely result in neutral short-term and neutral to minor beneficial long-term ecological impacts.

Alternative B2 – Preferred Alternative

Under preferred Alternative B2, NMFS would establish a flexible commercial retention limit of 0 to 60 blacknose sharks per vessel per trip for all Directed shark LAP holders. The default commercial retention limit would be 25 blacknose sharks per vessel per trip. The blacknose shark commercial quota (i.e., 37,921 lb dw (17.2 mt dw)) would not change. The commercial retention limit may be adjusted during the fishing year based on the inseason trip limit adjustment criteria at § 635.24(a)(8) (see Section 3.2.1).

Under a flexible commercial retention limit, a higher limit could increase fishing effort for blacknose sharks. The gears authorized for use with a Directed shark LAP are longline, gillnet, rod and reel, handline, and bandit gear. However, the most common gear types in the commercial shark fishery are bottom longline and gillnet. Any increase in fishing effort with these gears is unlikely to negatively affect the Atlantic blacknose shark stock because any increase in catch would be within the established commercial quota. Atlantic blacknose sharks can support higher removal levels within the established quota without jeopardizing stock health. Conversely, a decrease in commercial retention limit below the status quo (i.e., eight blacknose sharks per vessel per trip) could decrease fishing effort and provide additional protections to

Atlantic blacknose sharks, if warranted. NMFS based the commercial quota for Atlantic blacknose sharks on the best scientific information available and this action would not affect or alter the commercial quota. NMFS would continue to monitor any landings against the commercial quota, and would close the fishery if landings are projected to reach and/or exceed the commercial quota. Therefore, preferred Alternative B2 would likely result in neutral short- and long-term ecological impacts.

Alternative B3

Under Alternative B3, NMFS would remove the commercial retention limit for blacknose sharks in the Atlantic region. For Directed shark LAP holders, there would be no trip limit for blacknose sharks. As described in Chapters 1 and 3, Atlantic blacknose sharks are overfished and experiencing overfishing. Elimination of the blacknose shark commercial retention limit would remove an accountability measure that would limit the speed at which Directed shark LAP holders could retain blacknose sharks. Without this limit, it is possible that the blacknose shark quota could be exceeded. Additionally, if the retention limit is removed, it is also possible that a derby fishery could form and the stock could continue to experience overfishing. However, given the small number of shark Directed LAP holders active in the fishery, and because the commercial quota is currently underharvested, removing the retention limit is unlikely to result in reaching and/or exceeding the quota in the near future. Additionally, removing the retention limit, especially in combination with Alternative A2 (preferred), may reduce the number of blacknose sharks that are discarded dead. Therefore, in the short-term, Alternative B3 would likely result neutral ecological impacts. Over the long-term, the impacts could be neutral to minor adverse depending on whether the number of Directed shark LAP holders interested in harvesting blacknose sharks increases.

4.2.2 SOCIAL AND ECONOMIC IMPACTS

Alternative B1 – No Action

Under Alternative B1, the No Action alternative, the commercial retention limit would continue to be eight blacknose sharks per vessel per trip for all Directed shark LAP holders in the Atlantic region. Alternative B1 would likely result in neutral social and economic impacts in the short- and long-term because shark fishing would continue to operate under current conditions, with Directed shark LAP holders continuing to fish at similar rates and under similar retention limits. However, it is worth noting that under Alternative B1, any future changes to the commercial retention limit would have an additional administrative burden and time costs associated with conducting a full rulemaking.

Table 4.2 shows the number of unique commercial fishing vessels that retained blacknose sharks broken down by gear type, Table 4.3 shows the number of commercial fishing trips that retained blacknose sharks broken down by gear type, and Table 4.4 shows the average commercial landings of blacknose sharks per vessel per trip. The average weight of a blacknose shark landed on commercial trips is 11.4 lb dw. Thus, if commercial vessels were harvesting the full retention limit, they would land approximately 91 lb dw per trip (11.4 lb dw/shark*8 sharks/vessel/trip = 91.2 lb dw/trip). If commercial vessels all utilized the full retention limit, it would take

approximately 416 trips to land the full blacknose shark quota (37,921 lb dw quota/(11.4 lb dw/shark*8 sharks/vessel/trip) = 415.8 trips) (Table 4.5). However, Directed shark LAP holders usually do not land the full retention limit and the fleet does not take that many trips. From 2017 through 2022, an average of 17 vessels per year (Table 4.2) took an average of 186 commercial fishing trips per year (Table 4.3) and retained an average of 61 lb dw (0.03 mt dw) of blacknose sharks per vessel per trip (Table 4.4). Additionally, according to eDealer data during the same time, five vessels account for the majority (78 percent) of blacknose shark landings and take an average of 137 trips a year.

Based on average ex-vessel prices from 2017 through 2022 ($1.41) (Table 4.1), the commercial fleet earned an average of $19,294 (Table 4.1). Additionally, according to Southeast Fisheries Science Center Observer Program data from 2017 through 2022, there were 109 blacknose sharks caught on observed bottom longline fishing trips in the Atlantic region. Of those 109 sharks, 38.5 percent were kept, 24.7 percent were released alive, and 36.7 percent were discarded dead. It would be reasonable to assume at least a portion of the 61.4 percent of released and discarded blacknose sharks were released or discarded due to the commercial retention limit of eight blacknose sharks per vessel per trip.

Under the current commercial retention limit and the current commercial quota, approximately 416 trips could land the full retention limit (37,921 lb dw quota/(11.4 lb dw/shark*8 sharks/vessel/trip) = 415.8 trips) (Table 4.5). If the commercial quota is fully harvested, the current commercial retention limit of eight blacknose sharks per vessel per trip could result in ex-vessel revenue of $128.59 per vessel per trip ((11.4 lb dw/shark*8 sharks/vessel/trip = 91.2)*$1.41 ex-vessel price = $128.59 ex-vessel revenue per trip) (Table 4.5). Based on an average of 416 trips per year, Directed shark LAP holders could realize annual revenue of approximately $53,494 (416 trips*$128.59/trip = $53,454.27) across all 17 active vessels (Table 4.5). Although a change in commercial retention limit could affect revenue on a per trip basis, potential total annual revenue would not change because the commercial quota would not change.

Table 4.2 Number of commercial fishing vessels that retained blacknose sharks by gear, 2017-2022.

Year	Bottom Longline	Gillnet	All Gears
2017	12	6	18
2018	9	12	20
2019	8	10	18
2020	10	7	16
2021	8	10	16
2022	10	6	14
Average	9.5	8.5	17

Source: Coastal Fisheries logbook.

Table 4.3 Number of commercial fishing trips that retained blacknose sharks by gear, 2017-2022.

Year	Bottom Longline	Gillnet	All Gears
2017	147	64	211
2018	86	108	194
2019	35	182	217
2020	76	78	154
2021	105	102	207
2022	81	50	131
Average	97.3	88.3	185.7

Source: Coastal Fisheries logbook.

Table 4.4 Average commercial landings (lb dw) of blacknose sharks per vessel per trip, 2017-2022.

Year	2017	2018	2019	2020	2021	2022	Average
Landings	70.4	47.6	66.1	61.4	59.4	61.1	61.7

Source: eDealer.

Table 4.5 Estimated number of trips per year and ex-vessel revenue for blacknose sharks under Alternative B2 compared to the status quo.

(A) Retention Limit (Number)	**(B) Average Weight of Blacknose Shark Landings per Trip** (lb dw) (A*11.4[1])	**(C) Number of Trips per Year that Could Land that Blacknose Shark Quota** (37,921[2]/B)	**(D) Average Ex-Vessel Revenue per Trip** (U.S. dollars) (B*$1.41[3])
0	0	0	$0.00
8	91.2	415.8	$128.59
25	285	133.1	$401.85
60	570	66.5	$964.44

[1] Based on observed bottom longline and gillnet trips that landed blacknose sharks (2017 through 2022), the average weight of a blacknose shark was 11.4 lb dw.

[2] The blacknose shark commercial quota is 37,921 lb dw.

[3] The average ex-vessel price from 2017 through 2022 is $1.41.

Alternative B2 – Preferred Alternative

Under preferred Alternative B2, NMFS would establish a flexible commercial retention limit of 0 to 60 blacknose sharks per vessel per trip for all Directed shark LAP holders. The default commercial retention limit would be 25 blacknose sharks per vessel per trip. The commercial retention limit may be adjusted during the fishing year, based on the inseason trip limit adjustment criteria at § 635.24(a)(8) (see Section 3.2.1).

Although the default retention limit would increase to 25 blacknose sharks per vessel per trip, the blacknose shark commercial quota (i.e., 37,921 lb dw (17.2 mt dw)) would not change. With a default commercial retention limit of 25 blacknose sharks per vessel per trip, Directed shark LAP holders could realize higher trip revenues compared to the status quo since they could sell up to

17 additional blacknose sharks per vessel per trip. Currently, Directed shark LAP holders can retain up to eight blacknose sharks per vessel per trip; however, from 2017 through 2022, an average of approximately five blacknose sharks were retained per vessel per trip ((61.7 lb dw sharks/vessel/trip in weight)/(11.4 lb dw/shark)=5.4 sharks/vessel/trip in number of sharks). Comparatively, the top five most active vessels in the fishery (i.e., those that target blacknose sharks) retain an average of approximately 7 blacknose sharks per vessel per trip ((77.2 lb dw sharks/vessel/trip in weigh)/(11.4 lb dw/shark)=6.8 sharks/vessel/trip in numbers of sharks). A higher commercial retention limit could entice Directed shark LAP holders to retain blacknose sharks when they previously would have discarded them, or only opportunistically retained incidentally caught blacknose sharks. However, a higher commercial retention limit could also result in reaching the blacknose shark commercial quota in fewer trips and earlier in the fishing year, necessitating a fishery closure.

Directed shark LAP holders, particularly those that target blacknose sharks, have expressed frustration that the existing commercial retention limit (eight blacknose sharks per vessel per trip) prevents them from fully harvesting the available quota. A flexible retention limit would allow NMFS to increase the retention limit when other factors, such as available quota, support such an increase. Such increases could optimize the ability for Directed shark LAP holders to fully harvest the available quota and earn additional revenue. Conversely, NMFS could reduce the commercial retention limit if relevant factors support such a decrease.

Furthermore, a flexible commercial retention limit that can be modified through inseason adjustments would be more flexible and timely compared to the status quo (i.e., undertaking a full rulemaking to modify the commercial retention limit), and could therefore be a cost savings to the agency. Specifically, a flexible commercial retention limit may result in administrative cost savings through reduced drafting and review time and potentially provide more timely management changes to react to recent changes in the shark fishery. Additionally, NMFS could spend more time on other agency needs. While there are administrative costs associated with inseason adjustments, NMFS expects there would be a very limited number of inseason adjustments and the administrative costs of those adjustments would be minimal compared to the administrative costs associated with undertaking a full rulemaking to modify the commercial retention limit.

Under a default commercial retention limit of 25 blacknose sharks per vessel per trip and the current commercial quota, approximately 133 trips could land the full retention limit (37,921 lb dw quota/(11.4 lb/shark*25 sharks/trip) = 133.1 trips) (Table 4.5). The default commercial retention limit of 25 blacknose sharks per vessel per trip could increase ex-vessel revenue from $128.59 to $401.85 per vessel per trip. Although the total potential revenue per year (i.e., approximately $53,494) would not change because the blacknose shark commercial quota (i.e., 37,921 lb dw (17.2 mt dw)) would not change, the total potential revenue would be achieved more efficiently through fewer fishing trips and with fewer regulatory discards. According to eDealer data from 2017 through 2022, the top five vessels in the Atlantic blacknose shark fishery take approximately 137 trips a year and are responsible for an average of 78 percent of commercial blacknose shark landings. If the top five active vessels landed the full retention limit

on every trip, under the proposed default limit, these vessels would take approximately four fewer trips per year.

At the maximum commercial retention limit of 60 blacknose sharks per vessel per trip and the current commercial quota, approximately 55 trips could land the full retention limit (37,921 lb dw quota/(11.4 lb dw/shark*60 sharks/trip = 55.4 trips) (Table 4.5). The maximum commercial retention limit of 60 blacknose sharks per vessel per trip could increase ex-vessel revenue from $128.59 (under the current retention limit) and $401.85 (under the proposed default commercial retention limit) to $964.44 per vessel per trip. The total potential revenue per year (i.e., approximately $53,494) would not change because the blacknose shark commercial quota would not change. If the top five active vessels all landed the full retention limit on every trip, under the proposed maximum commercial retention limit, these vessels would take approximately 82 fewer trips per year.

It is important to note that while higher commercial retention limits could provide additional opportunities for some Directed shark LAP holders, some commercial shark fishing vessels may not be equipped to store additional sharks on board if the retention limit is increased. Additionally, there is uncertainty about the ability of the market to sustain a higher volume of shark-based products. However, given the small number of Directed shark LAP holders active in the fishery, and because the commercial quota is currently under harvested, raising the retention limit is unlikely to result in reaching and/or exceeding the quota in the near future.

Overall, an increase in the default commercial retention limit would provide additional opportunities for Directed shark LAP holders to harvest the existing blacknose shark commercial quota and realize higher revenues on a per-trip basis. Additionally, a flexible commercial retention limit would allow NMFS to provide more timely management changes to react to changes in the shark fishery. The potential benefits from fully harvesting the available quota (e.g., an increase in revenue per trip and annually) could outweigh the drawbacks from a decrease in the maximum number of trips that could be taken per year. Furthermore, with a flexible commercial retention limit, NMFS could reduce the retention limit to extend the commercial fishing season if landings data or other factors warrant such a decrease. Therefore, preferred Alternative B2 would likely result in neutral to minor beneficial short- and long-term social and economic impacts. However, the impacts could be minor adverse if the commercial quota is harvested and the fishery closes early in the year.

Alternative B3

Under Alternative B3, NMFS would remove the commercial retention limit for blacknose sharks in the Atlantic region. Directed shark LAP holders would not be limited in the number of blacknose sharks that could be retained on a per-trip basis, as long as catch rates remain within the available blacknose shark quota. Elimination of the blacknose shark commercial retention limit could result in additional revenue from blacknose shark landings on a per-trip basis. However, the opportunity to retain blacknose sharks without a retention limit could lead to a faster harvest of the available commercial quota and a fishery closure before the end of the year. Concern about a closure may create a sense of urgency for Directed shark LAP holders to harvest

the quota as quickly as possible. Furthermore, removing the commercial retention limit would eliminate an accountability measure for ensuring equitable fishing opportunities for all Directed shark LAP holders. Therefore, Alternative B3 would be expected to have minor adverse short- and long-term social and economic impacts.

4.3 IMPACTS OF ALTERNATIVES FOR ATLANTIC SHARK RECREATIONAL MINIMUM SIZE LIMITS

In order to meet the objectives stated in Chapter 1, NMFS is analyzing five alternatives for minimum size limits in the recreational shark fishery: maintaining the status quo, establishing minimum size limits for each species equal to their female size at maturity, establishing minimum size limits for shark groups, establishing flexible minimum size limits for shark groups, and removing minimum size limits. This action would not change the recreational minimum size limit for shortfin mako sharks.

4.3.1 ECOLOGICAL EVALUATION

Alternative C1 – No Action

Under Alternative C1, the No Action alternative, NMFS would maintain the current recreational minimum size limits for sharks under HMS regulations (§ 635.20(e)). The current recreational minimum size limits are as follows:

- All sharks, unless otherwise specified, must be at least 54 inches (137 cm) FL.
- All hammerhead sharks must be at least 78 inches (198.1 cm) FL.
- There is no size limit for Atlantic sharpnose, bonnethead, or smoothhound sharks.

Minimum size limits are an accountability measure that contribute to the sustainability of the recreational shark fishery by controlling harvest. By limiting the harvest of smaller individuals, minimum size limits protect many juvenile sharks and ensure they have the opportunity to mature and reproduce. Additionally, recreational permit holders that fish for, retain, possess, or land sharks are required to obtain a shark endorsement on their permit. To obtain a shark endorsement, recreational permit holders must complete an online shark identification and fishing regulation training course and quiz. Anglers must release any prohibited or undersized shark, or other shark that they do not or cannot retain, immediately. Sharks that are properly handled and released in a manner that maximizes the likelihood of survival, including without removing them from the water, are less likely to experience post-release mortality. If anglers do not properly handle and release sharks, the likelihood of post-release mortality due to injuries associated with the stress of capture is significantly higher.

Alternative C1 would not be expected to have any effect on the current level of fishing, catch rates, or distribution of fishing effort in the recreational shark fishery. Thus, under Alternative C1, short- and long-term neutral ecological impacts would be expected. However, the recreational minimum size limit for most shark species of 54 inches (137 cm) FL does not reflect the most recent information available on the size at maturity for some shark species. Fifty-four inches (137 cm) FL is longer than the size at maturity for several of the recreationally authorized shark species and in some cases, authorized shark species rarely exceed 54 inches (137 cm). For

example, blacktip sharks rarely exceed 54 inches (137 cm) FL. According to MRIP data from 2010 through 2022, only about 3 percent of measured blacktip sharks exceeded the recreational minimum size limit. Additionally, many large coastal and pelagic sharks do not reach maturity until much larger than 54 inches (137 cm). For example, female size at maturity for common thresher sharks is 83 inches (210.8 cm) FL. See Table 3.2 for the female sizes at maturity for recreationally authorized shark species. While the status quo may provide additional protections for species that mature and/or remain below 54 inches (137 cm) FL, the harvest of immature sharks (those that mature longer than the current recreational minimum size limit(s)) could be detrimental to those stocks. See Table 4.6 for average annual harvests of recreationally authorized shark species under the current minimum size limits from 2010 through 2022. NMFS relied on a long timeframe (i.e., 12 years) of harvest and length data to ensure that adequate sample sizes were available for analysis and to account for any data variability from outlier estimates that could skew results. Due to the largely catch-and-release nature of the recreational shark fishery, shark landings are generally rare event observations in the MRIP dockside survey, the Access Point Angler Intercept Survey (APAIS), and other recreational surveys. Additionally, length data is only collected when dockside interviewers measure harvested fish. As a result, harvest estimates are highly imprecise and length data is limited.

One minimum size limit for most shark species reduces the likelihood of anglers harvesting under-sized sharks due to species misidentification and minimizes post-release mortality because anglers do not need additional handling time to identify each shark at the species level. Therefore, one minimum size limit for most shark species maximizes the survival of non-target and undersize sharks, despite the drawbacks of a "one size fits all" approach.

Table 4.6 Current recreational minimum size limits and average recreational harvest of shark species, 2010-2022.

Shark Species	**Current Recreational Minimum Size Limit (FL)** (inches (cm))	**Average Annual Harvest** (Number)
Atlantic sharpnose	None	108,671
Blacknose	54 (137)	6,037
Blacktip	54 (137)	35,949
Blue	54 (137)	325
Bonnethead	None	77,980
Bull	54 (137)	3,300
Common thresher	54 (137)	706
Finetooth	54 (137)	1,577
Hammerhead, great	78 (198.1)	20
Hammerhead, scalloped	78 (198.1)	1,069
Hammerhead, smooth	78 (198.1)	280
Lemon	54 (137)	1,633
Nurse	54 (137)	2,954
Porbeagle	54 (137)	80
Smoothhound	None	58,249
Spinner	54 (137)	10,926
Tiger	54 (137)	420

Source: MRIP, Texas Parks and Wildlife Department, Louisiana Creel Survey, Southeast Regional Headboat Survey, and LPS.

Alternative C2

Under Alternative C2, NMFS would set recreational minimum size limits for each shark species equal to that species' female size at maturity. Implementing species-specific minimum size limits would result in management measures that more closely reflect each species' biology. Lowering the minimum size limit for species that mature at less than 54 inches (137 cm) FL should allow for increased harvest; this is particularly significant for species that rarely exceed 54 inches (137 cm) FL (e.g., blacktip sharks). Raising the minimum size limit for species that reach maturity at sizes longer than 54 inches (137 cm) FL (e.g., pelagic sharks) would allow for increased protections for these species.

To determine the estimated effects of species-specific minimum size limits on recreational shark harvest, NMFS analyzed changes in total average U.S. harvest for both federal and state waters (if states adopt complementary regulations), and only in federal waters. Table 4.7 shows species-specific recreational minimum size limits (based on female size at maturity) and the resulting estimated change in recreational shark harvest under Alternative C2. NMFS's management measures generally apply in federal waters, not state waters. State waters often, but do not always, reflect the regulations implemented in federal waters. For example, the State of Florida has no recreational minimum size limit for blacktip and blacknose sharks, which are currently managed under a 54 inch (137 cm) FL minimum size limit in federal waters. NMFS chose to analyze the changes in total average U.S. harvest for both federal and state waters (if states adopt complementary regulations), in addition to only in federal waters, because NMFS promotes state and federal cooperation on complementary fishery regulations through a shark species' range and works to improve coordination with state agencies to accomplish this goal. Additionally, the majority of recreational shark fishing activities occur in state waters and not federal waters. From 2014 through 2019, in the Atlantic region, on average only 9 percent of sharks caught (i.e., harvested and released) recreationally were caught in federal waters, and in the Gulf of America, on average only 14 percent were caught in federal waters (see the SHARE document for more information). However, many of these species have ranges that overlap with state and federal waters, so to fully capture the ecological impacts of revised recreational minimum size limits, NMFS considered the potential changes in harvest in federal and state waters, and only federal waters.

The analysis shown in Table 4.7 illustrates the estimated effects of species-specific recreational minimum size limits on the harvest of authorized shark species. Since Atlantic sharpnose, bonnethead, and smoothhound sharks currently have no minimum size limits, and pelagic sharks and some LCS mature at a longer length than the status quo, harvests of these species are estimated to be reduced under this alternative. To calculate the estimated change in harvest for these species, NMFS used the existing catch (Table 4.6) and size data to determine what percentage of the existing catch was below the minimum size limits under Alternative C2. For example, in federal and state waters, harvest of Atlantic sharpnose shark would be expected to decline by 15.6 percent on average if a 25-inch (63.5-cm) FL minimum size limit is implemented and harvest of common thresher shark would be expected to decline 79.5 percent under an 83-inch (210.8-cm) FL minimum size limit. However, for some species, there were very few reports

of harvested individuals from 2010 through 2022. For example, according to MRIP data, harvested lemon sharks were observed only 12 times and nurse sharks were observed only 11 times during this period. Therefore, the potential reduction in harvest because of the revised recreational minimum size limits under Alternative C2 for these species is highly uncertain.

Opportunities to harvest species that would have lower minimum size limits under Alternative C2 (i.e., blacknose, blacktip, and finetooth sharks) would be increased in federal waters under this alternative. However, some states have lower or no minimum size limits for these species in state waters. If those states adopt complementary regulations where they previously have not (i.e., they currently have lower or no minimum size limits in state waters compared to federal minimum size limits), opportunities to harvest these species would decrease in state waters because they would be implementing higher minimum size limits than their status quo. The current minimum size limit of 54 inches (137 cm) FL is longer than the size at maturity for these species, and in some cases, these species rarely exceed 54 inches (137 cm) FL. However, harvests of these species do occur, due in part to lower or no minimum size limits in state waters and the occasional harvest of sub-legal sized fish that occurs in the recreational shark fishery. For example, according to MRIP data from 2010 through 2022, 0 percent of reported blacknose shark and finetooth shark and 3 percent of blacktip shark harvest attributed to fishing in federal waters have been above the current federal minimum size limit (i.e., 54 inches (137 cm) FL). This could be the result of a combination of factors, including confusion regarding federal versus state regulations, harvest done by state permit holders in federal waters, species misidentification, and the lack of specificity in catch location data collected by the APAIS. For example, APAIS interviewers ask anglers where they spent the majority of their fishing trip (i.e., inshore, state ocean waters, or federal waters), but they do not ask if the entire trip was spent in the same place, nor do they ask where individual harvested fish were caught.

Given the limited data, it is difficult to estimate how harvest rates would change for blacknose, blacktip, and finetooth sharks if their minimum size limits were reduced below status quo. However, there is no minimum size limit on these species in Florida waters, and other Gulf of America states manage these species under minimum size limits that are lower than the federal minimum size limit (i.e., 54 inches (137 cm) FL). Thus, there is some available catch data to assess what percentage of catch would likely fall above a federal minimum size limit that is below the status quo. To calculate the estimated change in harvest for these species, NMFS used the existing catch (Table 4.6) and size data to determine what percentage of the existing catch was over the minimum size limits under Alternative C2, multiplied that value by the percentage of trips taken in federal waters, and then multiplied the product by the average annual landings. For example, from 2010 through 2022, NMFS estimates that 35,949 blacktip sharks were harvested annually. Based on the size data collected by MRIP's APAIS, 10 percent (3,595 sharks) of the harvested blacktip sharks were estimated to be 48 inches (121.9 cm) FL or greater. Assuming similar catch rates in federal waters, where MRIP estimates 11.4 percent of recreational trips occurred from 2010 through 2022, NMFS estimates that an additional 410 blacktip sharks could be harvested each year under a 48 inches (121.0 cm) FL minimum size limit. This would represent a 1-percent increase in overall harvest in federal waters.

Species-specific recreational minimum size limits would bring management measures more in line with species-specific biology, which could expand opportunities to harvest species that mature and/or remain below 54 inches (137 cm) FL and provide additional protections for species that mature longer than 54 inches (137 cm) FL. Furthermore, minimum size limits are an accountability measure that contribute to the sustainability of the recreational shark fishery by limiting the harvest of smaller individuals. Minimum size limits, coupled with safe handling and release guidelines, maximize protections for undersized and prohibited sharks. However, a wider range of recreational minimum size limits would increase the need for and frequency of anglers identifying sharks at the vessel. This would increase the potential for post-release mortality related to additional handling for species identification. Additionally, species-specific minimum size limits could increase unintentional illegal harvest of undersized sharks due to misidentification. Considering these factors, Alternative C2 is expected to have neutral to minor adverse short- and long-term ecological impacts.

Table 4.7 Estimated changes in annual recreational shark harvest under the recreational minimum size limits in Alternative C2.

Shark Species	Recreational Minimum Size Limit (FL) under Alternative C2 (inches (cm))	Estimated Percent Change in Harvest under Alternative C2, as Compared to Average Annual Harvest from 2010-2022	
		Federal and State Waters	Federal Waters Only
Atlantic sharpnose	25 (63.5)	-15.6	-3.3
Blacknose	34 (86.4)	-30.2	+7
Blacktip	48 (121.9)	-89.1	+1
Blue	73 (185.42)	-0.9	*
Bonnethead	29 (73.7)	-60.7	-0.8
Bull	75 (190.5)	-79.1	-23.3
Common thresher	83 (210.8)	-79.5	*
Finetooth	40 (101.6)	-57.8	+4
Hammerhead, great	81 (205.7)	-100	**
Hammerhead, scalloped	72 (182.9)	-33.3	**
Hammerhead, smooth	79 (200.7)	-100	**
Lemon	76 (193)	-91.6	**
Nurse	89 (226.1)	-75	**
Porbeagle	82 (208.3)	-80	*
Smoothhound	35 (88.9)	-89.2	-9
Spinner	59 (149.9)	-84.4	-20.1
Tiger	103 (261.6)	-87.5	**

* Pelagic species with minimal catch in state waters; sample sizes outside of federal waters too low to support separate analyses.

** Total sample size of available length frequency data from MRIP is inadequate to support disaggregated analyses at the state and federal level.

Source: MRIP, Texas Parks and Wildlife Department, Louisiana Creel Survey, Southeast Regional Headboat Survey, and LPS.

Alternative C3

Under Alternative C3, NMFS would group certain shark species together and set the recreational minimum size limit for each group based on a midpoint value of the female sizes at maturity for the shark species in that group. This alternative uses the same analysis approach as Alternative C2, but here multiple species are combined for each minimum size limit. Species are combined based on several factors, including similar appearance, similar sizes at maturity, and/or species that could be caught in similar areas using similar fishing techniques. See Table 4.8 for shark species groups, recreational minimum size limits, and estimated changes in annual harvest under Alternative C3.

Based on the analysis shown in Table 4.8, recreational minimum size limits under Alternative C3 would result in a reduction in harvest for some shark species and an increase in harvest for other shark species. As described in the analysis for Alternative C2, estimated reductions in harvest of species that would have higher minimum size limits under Alternative C3, when compared with the status quo, would be expected in federal waters and federal and state waters combined. Similarly, estimated increases in harvest of species that would have lower minimum size limits under Alternative C3, when compared to the status quo, would be expected in federal waters. However, some states have lower or no minimum size limits for these species in state waters. If states adopt complementary regulations where they previously have not (i.e., they currently have lower or no minimum size limits in state waters compared to the minimum size limits in Alternative C3), opportunities to harvest species would decrease in state waters because they would be implementing higher minimum size limits than their status quo. Under Alternative C3, NMFS estimates that harvest rates of blacknose and finetooth sharks would increase by 6.5 percent and the harvest of blacktip and spinner sharks would increase by 1.7 percent in federal waters. However, because some states have lower or no minimum size limits for blacknose, finetooth, blacktip, and/or spinner sharks, NMFS estimates that harvest of these species would decrease in federal and state waters combined compared to the status quo. NMFS calculated these estimates using the same methodology described in Alternative C2 for individual species and then calculated a combined percentage change that was weighted by the respective average landings of each species in the group. As stated above, potential effects are highly uncertain due to limited data for some species.

Establishing recreational minimum size limits for groups of shark species should maximize the benefits of minimum size limits as an accountability measure to limit the harvest of smaller individuals without setting minimum size limits for each species. Recreational minimum size limits that are based on a midpoint value of the female sizes at maturity for grouped shark species would help to ensure immature individuals from each group are not harvested. Additionally, grouping sharks based on species that could be caught in similar areas using similar fishing techniques and species that are hard to distinguish should minimize post-release mortality related to increased handling and unintentional illegal harvest of undersized sharks due to misidentification. Thus, Alternative C3 would be expected to have minor beneficial short- and long-term ecological impacts.

Table 4.8 Estimated changes in annual recreational shark harvest under the recreational minimum size limits in Alternative C3.

Shark Group	Recreational Minimum Size Limit (FL) under Alternative C3 (inches (cm))	Estimated Percent Change in Harvest under Alternative C3, as Compared to Average Annual Harvest from 2010-2022	
		Federal and State Waters	Federal Waters Only
Atlantic sharpnose, bonnethead, and smoothhound	No limit	0	0
Blacknose and finetooth	38 (96.5)	-65.0	+6.5
Blacktip and spinner	48 (121.9)	-83.8	+1.7
Bull, great hammerhead, lemon, nurse, scalloped hammerhead, smooth hammerhead, and tiger	74 (200.7)	-61.5	*
Blue, common thresher, and porbeagle	82 (208.3)	-58	*

* Total sample size of available length frequency data from MRIP is inadequate to support disaggregated analyses at the state and federal level.

Alternative C4 – Preferred Alternative

Under preferred Alternative C4, NMFS would group certain shark species together and set a recreational minimum size limit range for each shark group. The default recreational minimum size limits could be based on a midpoint value of the female sizes at maturity for the shark species in that group, or be consistent with current HMS regulations (§ 635.20(e)). Specifically, NMFS would revise the default recreational minimum size limits for shark groups where the midpoint value of the female sizes at maturity for the shark species in that group is smaller than the current default recreational retention limit for those species. The recreational minimum size limit range would encompass the female sizes at maturity for all shark species in each group. The minimum size limit for a group at any given time may be greater than or less than the female size at maturity of individual species within the group, but the limit would always be within the established minimum size limit range for the group. This alternative uses the same analysis approach as Alternative C3; species are combined based on several factors, including similar appearance, similar sizes at maturity, and/or species that could be caught in similar areas using similar fishing techniques. See Table 4.9 for shark species groups, recreational minimum size limit ranges, default recreational minimum size limits, and the estimated effects on average annual recreational harvest under Alternative C4. See Table 4.6 for average annual recreational shark harvest from 2010 through 2022 and the current recreational minimum size limits.

Based on the analysis shown in Table 4.9, recreational minimum size limits at the upper limit would result in a reduction in harvest for all shark species. If no recreational minimum size limit is set, there would be no change in harvest for all shark species that currently have no minimum size limit (i.e., Atlantic sharpnose, bonnethead, and smoothhound sharks) and an increase in harvest for all other species. Under default recreational minimum size limits, where the default is

equal to status quo, no changes in harvest are expected. Where the default is set below the federal status quo (i.e., for blacknose and finetooth shark groups, and blacktip and spinner shark groups), the analysis shows an increase in harvest in federal waters, but a decrease in harvest in combined federal and state waters if the states adopt the new federal size limits. NMFS calculated these estimates using the same methodology described in Alternative C3 for grouped species under the upper and default minimum size limits, and under no minimum size limit. As stated above, potential effects are highly uncertain due to limited data for some species.

Furthermore, if NMFS implements recreational sector ACLs for sharks, NMFS would actively monitor recreational fishing mortality and would adjust recreational ACLs annually based on data from the previous three years. Flexible recreational minimum size limits would allow NMFS to adjust the size limits as needed for each specific stock or grouping of species. For example, in a situation where a shark species or group's recreational ACL is not fully harvested based on the average from the previous three years, NMFS could reduce minimum size limits to increase fishing opportunities in the following year. If a shark species or group's ACL is overharvested based on the average from the previous three years, NMFS could increase size limits in the following year to reduce the rate of harvest.

Establishing recreational minimum size limits for groups of shark species should maximize the benefits of minimum size limits as an accountability measure to limit the harvest of smaller individuals without setting minimum size limits for each species. Recreational minimum size limits for each group that are based on a midpoint value would help to reduce the harvest of immature individuals from each group. Grouping sharks based on species that could be caught in similar areas using similar fishing techniques and species that are hard to distinguish should minimize post-release mortality related to increased handling and unintentional illegal harvest of undersized sharks due to misidentification. Additionally, flexible recreational minimum size limits would provide NMFS the flexibility to efficiently adjust minimum size limits in response to underharvest and/or over harvest of recreational catch. Thus, preferred Alternative C4 would be expected to have short- and long-term neutral to minor beneficial ecological impacts.

Table 4.9 Estimated changes in annual recreational shark harvest under the flexible recreational minimum size limits in Alternative C4.

Shark Group	Recreational Minimum Size Limit (FL) under Alternative C4 (inches (cm))		Percent Change in Harvest under Alternative C4, as Compared to Average Annual Harvest from 2010-2022					
			Upper Recreational Minimum Size Limit		No Recreational Minimum Size Limit		Default Recreational Minimum Size Limit	
	Upper Limit	Default	Federal and State Waters	Federal Waters Only	Federal and State Waters	Federal Waters Only	Federal and State Waters	Federal Waters Only
Atlantic sharpnose, bonnethead, and smoothhound	54 (137)	No Limit	-100	-16.2	0	0	0	0
Blacknose and finetooth	54 (137)	38 (96.5)	-100	0	+268	+42.5	-65.0	+6.5
Blacktip and spinner	70 (177.8)	48 (121.9)	-99.6	-15.5	+412.5	+60.6	-83.8	+1.7
Great hammerhead, scalloped hammerhead, and smooth hammerhead	115 (292.1)	78 (198.12)	-100	-100	+991.7	*	0	0
Bull, lemon, nurse, and tiger	115 (292.1)	54 (137.16)	-100	-100	+3356.5	+1,210.7	0	0
Blue, common thresher, and porbeagle	95 (241.3)	54 (137.16)	-87.1	-87.1	+936.2	**	0	0

* Total sample size of available length frequency data from MRIP is inadequate to support disaggregated analyses at the state and federal level.

** Pelagic species with minimal catch in state waters; sample sizes outside of federal waters too low to support separate analyses.

Alternative C5

Under Alternative C5, NMFS would remove recreational minimum size limits for shark species. The elimination of recreational minimum size limits would remove one of the main accountability measures NMFS can implement to control or adjust recreational shark harvest rates. Additionally, removing recreational minimum size limits would eliminate a management tool to aid in rebuilding some shark species by allowing sharks to be harvested before they reach maturity. Recent trends show that the number of fishing trips targeting or catching coastal sharks in the Atlantic are increasing and in the Gulf of America are consistent; however, harvest has remained low given a growing interest in catch-and-release fishing. Recreational fishing trips targeting pelagic sharks have decreased significantly since NMFS set the retention limit for shortfin mako sharks to zero. Given these factors, the likelihood of dramatic increases in shark harvest is low. See Table 4.10 for the estimated effects on average annual harvest if recreational

minimum size limits were removed under Alternative C5. See Table 4.6 for average annual recreational shark harvest from 2010 through 2022 under the current recreational minimum size limits.

The analysis in Table 4.10 estimates increases in recreational harvest for each species if every angler that released at least one shark (as reported to MRIP or LPS) were to harvest at least one shark on their trip. This assumes that during all trips where sharks were released without harvesting one, the sharks were released because they were below the current recreational minimum size limit. Harvest is not estimated to change for Atlantic sharpnose, bonnethead, or smoothhound sharks because these species currently have no recreational minimum size limit.

While removing recreational minimum size limits completely could result in substantial increases in harvest, percentage increases would likely be far less than what is presented here. These estimates reflect a maximum possible harvest level based on current data of released sharks in the recreational fishery. It is assumed that during all trips where sharks were not harvested, it was because the sharks caught were below the current minimum size limit. In reality, many sharks are released because the angler is catch-and-release fishing and has no desire to harvest a shark, but the available data does not include angler motivation for release of catch, nor does it provide length data for released sharks. Alternative C5 would be expected to have short- and long-term neutral to minor adverse ecological impacts.

Table 4.10 Estimated changes in annual recreational shark harvest under no recreational minimum size limits in Alternative C5.

Shark Species	Percent Change in Harvest under Alternative C5, as Compared to Average Annual Harvest from 2010-2022
Atlantic sharpnose	0
Blacknose	0
Blacktip	0
Blue	+295
Bonnethead	+611
Bull	+2,096
Common thresher	+1,323
Finetooth	+36.6
Hammerhead, great	+241
Hammerhead, scalloped	+2,258
Hammerhead, smooth	+8,867
Lemon	+676
Nurse	+214
Porbeagle	+978
Smoothhound	+2,100
Spinner	+275
Tiger	+600

4.3.2 SOCIAL AND ECONOMIC IMPACTS

Alternative C1 – No Action

As described above, under Alternative C1, the No Action alternative, NMFS would maintain the current recreational minimum size limits for sharks under HMS regulations (§ 635.20(e)).

Maintaining one recreational minimum size for most sharks simplifies management and avoids the need for anglers and law enforcement to track a large number of minimum size limits, but it does not maximize opportunities for harvest when factors such as available quota support an increase. While potential positive economic benefits may not be realized, Alternative C1 would have short- and long-term neutral economic impacts since fishermen could continue to catch and retain sharks at a similar level and rate as the status quo. Similarly, Alternative C1 could have short- and long-term neutral social benefits as the one recreational minimum size limit is easy to understand and alleviates the need to identify various shark species.

Alternative C2

Under Alternative C2, NMFS would set recreational minimum size limits for each shark species equal to that species' female size at maturity. Species-specific minimum size limits that more closely reflect each species' biology would allow for harvest of some species that may currently be regulatory discards (i.e., those species that mature below 54 inches (137 cm) FL). Conversely, anglers may have decreased opportunities to harvest species that mature at sizes greater than 54 inches (137 cm) FL (i.e., pelagic sharks). This alternative would require anglers to track a large number of minimum size limits and to identify sharks at the species level. This could result in increased unintentional illegal harvest of undersized individuals due to misidentification. If prohibited or undersized sharks are retained due to misidentification or other reasons, a civil penalty could be assessed. Additionally, law enforcement would be complicated due to a higher number of recreational minimum size limits. Thus, Alternative C2 would likely have short- and long-term minor adverse social and economic impacts.

Alternative C3

Under Alternative C3, NMFS would group certain shark species together and set the recreational minimum size limit for each group based on a midpoint value of the female sizes at maturity for the shark species in that group. Grouping shark species that could be caught in similar areas using similar fishing techniques, hard to distinguish from each other, or that have similar sizes at maturity would simplify management compared to Alternative C2 while reducing the harvest of immature or misidentified sharks. Moving away from having one minimum size limit for most shark species may increase the opportunity to harvest some smaller shark species that mature below or rarely exceed the current minimum size limit (i.e., 54 inches (137 cm) FL) and reduce the opportunity to harvest some larger shark species that were previously authorized but mature well above the current minimum size limit. However, similar to Alternative C2, this alternative would require anglers to track a larger number of minimum size limits compared to the status quo and to identify sharks at the species level, which could result in increased unintentional illegal harvest of undersized individuals due to misidentification. Thus, Alternative C3 would be expected to have short- and long-term neutral social and economic impacts.

Alternative C4 – Preferred Alternative

Under preferred Alternative C4, NMFS would group certain shark species together and set a recreational minimum size limit range for each shark group. The default recreational minimum size limits could be based on a midpoint value of the female sizes at maturity for the shark species in that group, or be consistent with current HMS regulations (§ 635.20(e)). Specifically, NMFS would revise the default recreational minimum size limits for shark groups where the midpoint value of the female sizes at maturity for the shark species in that group is smaller than the current default recreational retention limit for those species. The recreational minimum size limit range would encompass the female sizes at maturity for all shark species in each group. The minimum size limit for a group at any given time may be greater than or less than the female size at maturity of individual species within the group, but the limit would always be within the established minimum size limit range for the group.

Similar to Alternative C3, grouping shark species that could be caught in similar areas using similar fishing techniques, hard to distinguish from each other, or that have similar sizes at maturity would simplify management compared to Alternative C2 and reduce the unintentional harvest of immature or misidentified sharks. Moving away from having one minimum size limit for most shark species may increase the opportunity to harvest some smaller shark species that mature below or rarely exceed the current minimum size limit (i.e., 54 inches (137 cm) FL) and reduce the opportunity for harvest of some larger shark species that were previously authorized but mature well above the current minimum size limit. Under preferred Alternative C4, the default minimum size limits would only be lowered below the status quo for species that mature below the current minimum size limits. Species that mature larger than the status quo minimum size limits would have default limits consistent with current HMS regulations. These changes would allow for additional harvest of shark species that mature below the current minimum size limits without unnecessarily constraining the recreational shark fishery with minimum size limits above the status quo, given recreational harvest is low.

Furthermore, if NMFS implements recreational sector ACLs for sharks, NMFS would actively monitor recreational fishing mortality and would adjust recreational ACLs annually based on data from the previous three years. Flexible recreational minimum size limits would allow NMFS to adjust the size limits as needed for each specific stock or grouping of species. For example, if NMFS implements recreational sector ACLs for sharks, in a situation where a shark species or group's recreational ACL is not fully harvested based on the average from the previous three years, NMFS could reduce minimum size limits to increase fishing opportunities in the following year. If a shark species or group's ACL is overharvested based on the average from the previous three years, NMFS could increase size limits in the following year to reduce the rate of harvest.

However, the introduction of flexible recreational minimum size limits could present challenges for anglers, NMFS, and enforcement. Flexible minimum size limits could lead to greater uncertainty at any given time, and could cause confusion for federal versus state permit holders, considering most coastal sharks retained in the recreational fishery are caught by anglers in state waters that do not possess a recreational HMS permit. Furthermore, flexible minimum size limits could complicate efforts by the Atlantic States Marine Fisheries Commission and other state

agencies to remain consistent with HMS regulations, and for enforcement to monitor and enforce those changes.

Default recreational minimum size limits for shark species that mature below the current minimum size limit would increase opportunities for harvest in the recreational fishery. Additionally, flexible recreational minimum size limits would allow for management to more accurately reflect the current state of the fishery, and adjust to changes needed to maximize full utilization of available quota. Thus, Alternative C4 would be expected to have neutral to minor beneficial short- and long-term social and economic impacts.

Alternative C5

Under Alternative C5, NMFS would remove recreational minimum size limits for shark species. Under this alternative, anglers would be able to harvest authorized shark species of any size. While this alternative maximizes the ability to harvest sharks, substantial harvests are not expected in the short-term given the catch-and-release nature of the recreational shark fishery. However, removing recreational minimum size limits would eliminate an accountability measure to control harvest levels, and a management tool to aid in rebuilding some shark species by allowing sharks to be harvested before they reach maturity, which could affect fishing opportunities in the future. Additionally, given the general public perception that many shark species are endangered and in need of additional protection, the removal of minimum size limits could have adverse social impacts through social pressure to further restrict shark harvest. Therefore, Alternative C5 would be expected to have minor adverse to neutral short-term and minor adverse long-term social and economic impacts.

4.4 IMPACTS OF ALTERNATIVES FOR ATLANTIC SHARK RECREATIONAL RETENTION LIMITS

In order to meet the objectives stated in Chapter 1, NMFS is analyzing three alternatives for retention limits in the recreational shark fishery: maintaining the status quo, establishing flexible recreational retention limits, and removing recreational retention limits.

4.4.1 ECOLOGICAL EVALUATION

Alternative D1 – No Action

Under Alternative D1, the No Action alternative, NMFS would maintain the current recreational retention limits under HMS regulations (§ 635.22(c)). The current recreational retention limits are as follows:

- One shark from the following list per vessel per trip: Atlantic blacktip, Gulf of America blacktip, bull, great hammerhead, scalloped hammerhead, smooth hammerhead, lemon, nurse, spinner, tiger, blue, thresher, porbeagle, Atlantic sharpnose, finetooth, Atlantic blacknose, Gulf of America blacknose, and bonnethead.
- One Atlantic sharpnose shark and one bonnethead shark per person per trip.
- There is no limit for smoothhound sharks.

This would not be expected to have any effect on the current level of fishing, catch rates, or distribution of fishing effort in the recreational shark fishery. Thus, Alternative D1 would be expected to have neutral short- and long-term ecological impacts.

Alternative D2 – Preferred Alternative

Under preferred Alternative D2, NMFS would establish flexible recreational retention limits for shark species. Default retention limits would be consistent with current HMS regulations (§ 635.22(c)), except for Atlantic sharpnose, bonnethead, and blacktip sharks, which would have separate default retention limits. Additionally, under Alternative D2, Atlantic sharpnose and bonnethead sharks would no longer be managed under an additional one-shark-per-person-per-trip recreational retention limit.

Given the catch-and-release nature of the recreational shark fishery, and the resulting low recreational harvest, it is challenging to analyze the effects of changes to recreational retention limits. For this alternative, all analyses assume that the current recreational minimum size limits in state and federal waters will remain in place. All trips that reported releasing but not harvesting sharks were excluded from the analysis, as it was assumed these anglers were not interested in harvesting sharks, or did not catch any sharks over the minimum size limit. See Table 4.11 for estimated changes in shark harvest for shark species, or shark groups, under flexible recreational retention limits.

Methods for estimating changes in shark harvest as shown in Table 4.11 varied depending on the shark species retained during a recreational fishing trip. For example, smoothhound sharks are currently not subject to a recreational retention limit. As such, the analysis for this species was done by estimating the reduction in harvest that could be expected from the implementation of a flexible recreational retention limit range from one to four sharks per vessel per trip, or no limit, as is currently the case. To estimate harvest of smoothhound sharks under a four shark recreational retention limit, trips that reported harvesting three smoothhound sharks were still assumed to only harvest three sharks, but trips that reported harvesting five or more sharks would now be restricted to harvesting four sharks. Thus, a smoothhound shark recreational retention limit of one to four sharks would result in a decrease in smoothhound shark harvest.

Other recreationally authorized shark species are managed under a one shark per trip limit, either on a per-person basis for Atlantic sharpnose and bonnethead sharks, or on a per-vessel basis for all other species. For these species, analyses examined all trips that reported harvesting at least one shark, and evaluated the number of additional sharks each trip reported releasing. Based on this data, the maximum number of sharks potentially harvested on each trip under a flexible recreational retention limit was estimated to calculate the potential total annual harvest. For these species, a recreational retention limit set above one shark per vessel per trip, or no retention limit, would result in an increase in harvest. For example, from 2010 through 2022, average annual blacktip shark recreational harvest was 35,949 sharks; if the retention limit was increased to five sharks per vessel per trip, it could result in an estimated annual harvest of 41,294 sharks; and if the retention limit was removed, it could result in an estimated annual harvest of 43,191 sharks. NMFS does not anticipate significant changes in fishery behavior in response to a higher or no recreational retention limit, given the catch-and-release nature of the recreational shark fishery, and estimates that dramatic increases in harvest are unlikely.

Furthermore, as described in Alternative C4, if NMFS implements and actively monitors recreational sector ACLs for sharks, NMFS would consider whether modifications, such as changes to recreational retention limits, are needed to adjust harvest levels. For example, if NMFS implements recreational sector ACLs for sharks, under flexible recreational retention limits, if a shark species or group's recreational ACL is not fully harvested based on the average from the previous three years, NMFS could increase the retention limits in the recreational shark fishery to increase fishing opportunities in the following year. If that same shark species or group's recreational ACL is overharvested based on the average from the previous three years, NMFS could decrease the retention limits to slow down harvest in the following year.

Flexible recreational retention limits would allow for management to more accurately reflect the current state of the fishery, while still providing adequate protection for shark species, as harvest would be monitored and changes in recreational retention limits could be made to control harvest levels. Additionally, a separate blacktip shark retention limit would facilitate the harvest of this healthy stock in the recreational shark fishery. However, because default recreational retention limits would be mostly consistent with status quo, and given the catch-and-release nature of the recreational shark fishery, dramatic increases in shark harvest are unlikely. Therefore, Alternative D2 would be expected to have short- and long-term neutral to minor beneficial ecological impacts.

Table 4.11 Estimated annual recreational shark harvest with flexible recreational retention limits under Alternative D2.

Shark Species or Group	Average Annual Harvest (2010-2022)	Recreational Retention Limit (Shark/Vessel/Trip)						Default Recreational Retention Limit (Shark/Vessel/Trip)
		1	2	3	4	5	No Limit	
Atlantic sharpnose*	108,671	108,671	112,540	118,457	121,871	-	136,209	1
Bonnethead*	77,980	77,980	83,782	88,888	92,369	-	102,349	1
Smoothhound	58,249	43,624	51,819	54,845	56,106	-	58,249	No limit
Blacktip	35,949	35,949	37,932	39,828	40,604	41,294	43,191	1
All other coastal sharks	28,216	28,216	28,888	29,176	-	-	29,272	1
Pelagic sharks	1,111	1,111	1,224	1,388	-	-	4,154	1

Notes: All analyses assume the current recreational minimum size limits for each species. NMFS did not analyze the estimated annual recreational shark harvest for retention limits above the preferred maximum limits (denoted with a "-").

*NMFS analyzed Atlantic sharpnose and bonnethead sharks under a one-shark-per-person-per-trip recreational retention limit.

Source: MRIP and LPS.

Alternative D3

Under Alternative D3, NMFS would remove recreational retention limits for shark species. The elimination of recreational retention limits would remove one of the main accountability measures NMFS can implement to control or adjust recreational shark harvest rates. Recent trends show that the number of fishing trips targeting or catching coastal sharks in the Atlantic

are increasing and in the Gulf of America are consistent; however, harvest has remained low given a the large interest in catch-and-release fishing only. Recreational fishing trips targeting pelagic sharks have decreased significantly since the retention limit on shortfin mako sharks changed to zero. Given these factors, the likelihood of dramatic increases in shark harvest is low.

See Table 4.11 for estimated annual recreational shark harvest if there are no retention limits. While removing recreational retention limits completely could result in substantial increases in harvest, increases in harvest would likely be far less than what is presented in Table 4.11. The estimates in Table 4.11 reflect a maximum possible harvest level based on current data of released sharks in the recreational fishery. In this analysis, NMFS assumed that during all trips where sharks were not harvested, it was because the sharks caught were below the current minimum size limit. In reality, many sharks are released because the angler is catch-and-release fishing and has no desire to harvest a shark, but the available data does not include angler motivation for release of catch, nor does it provide length data for released sharks. Therefore, it is unlikely that anglers would harvest all of the sharks they catch on a given trip, even without a retention limit. Given these factors, Alternative D3 would be expected to have short- and long-term neutral to minor adverse ecological impacts.

4.4.2 SOCIAL AND ECONOMIC IMPACTS

Alternative D1 – No Action

As described above, under Alternative D1, the No Action alternative, NMFS would maintain the current recreational retention limits under HMS regulations (§ 635.22(c)).

This alternative does not maximize opportunities for harvest when factors, such as available quota, support an increase. Additionally, if changes to recreational retention limits are warranted, it would require a full rulemaking to implement those changes, which would result in additional administrative burden and time costs. While this alternative could likely result in potential positive social and economic benefits not being realized, Alternative D1 would likely have neutral short- and long-term social and economic impacts since anglers could continue to catch and retain sharks at a similar level and rate as the status quo.

Alternative D2 – Preferred Alternative

Under preferred Alternative D2, NMFS would establish flexible recreational retention limits for shark species. Default recreational retention limits would be consistent with current HMS regulations (§ 635.22(c)), except for Atlantic sharpnose, bonnethead, and blacktip sharks, which would have separate default recreational retention limits. Additionally, under preferred Alternative D2, Atlantic sharpnose and bonnethead sharks would no longer be managed under an additional one-shark-per-person-per-trip recreational retention limit.

Similar to the challenges identified for flexible recreational minimum size limits, the introduction of flexible recreational retention limits could present some challenges for anglers and enforcement. For anglers, flexible retention limits could lead to greater uncertainty at any given time, and could cause confusion for federal vs. state permit holders. Flexible retention limits could also complicate efforts by the Atlantic States Marine Fisheries Commission and

other state agencies to remain consistent with HMS regulations, and for enforcement to monitor and enforce those changes. However, NMFS expects that recreational retention limits would be modified infrequently, perhaps only once a year through the annual specifications process, and therefore, these challenges are expected to be minor.

Flexible recreational retention limits could provide additional opportunities for harvest on a per-trip basis and would also allow for management measures to more accurately reflect the current state of the fishery, and adjust to changes needed to maximize full utilization of available quota. Particularly, if the recreational retention limits are set above status quo, there could be increased opportunities for HMS Charter/Headboat permit holders, especially for species that are caught further offshore (e.g., pelagic sharks). A separate recreational retention limit for blacktip sharks would facilitate the harvest of this healthy stock in the recreational shark fishery. Additionally, creating separate recreational retention limits on a per-vessel basis for Atlantic sharpnose and bonnethead sharks, and removing the per-person trip limits, would reduce confusion between species with per-vessel and per-trip recreational retention limits. As anglers could experience increased opportunities to catch and retain sharks, preferred Alternative D2 would be expected to have short- and long-term minor beneficial social and economic impacts.

Alternative D3

Under Alternative D3, NMFS would remove recreational retention limits for shark species. The elimination of recreational retention limits would remove one of the main accountability measures NMFS can implement to control or adjust recreational shark harvest rates. Alternative D3 would allow anglers to retain an unlimited number of sharks on a per-trip basis, which could increase opportunities to harvest sharks. Particularly, if the recreational retention limits are removed, there could be increased opportunities for HMS Charter/Headboat permit holders, especially for species that are caught further offshore (e.g., pelagic sharks). However, removing recreational retention limits would eliminate a tool used in rebuilding some shark species by not limiting their harvest, and could affect fishing opportunities in the future. Additionally, given the general public perception that many shark species are endangered and in need of further protection, the removal of minimum size limits could have adverse social impacts through social pressure to further restrict shark harvest. It is also worth noting that implementing recreational retention limits after they have been removed would require a full rulemaking and introduce additional administrative burden and time costs. Alternative D3 would be expected to have short-term neutral social and economic impacts because substantial harvests are not expected given the catch-and-release nature of the recreational shark fishery. In the long-term, minor adverse social and economic impacts are expected because NMFS would be unable to control harvest levels in the recreational shark fishery and high catch rates could lead to fishery closures. Closures in the recreational shark fishery could have negative economic impacts, particular for HMS Charter/Headboat permit holders.

4.5 COMPARISON OF NATIONAL ENVIRONMENTAL POLICY ACT ALTERNATIVES

Table 4.12 provides a qualitative comparison of the impacts associated with the various alternatives considered in this rulemaking. This table summarizes the impacts that were discussed in detail in Sections 4.1–4.4.2.

Table 4.12 Comparison of NEPA alternatives considered.

Alternative	Ecological	Social and Economic
Alternative A1	Neutral to Minor Beneficial	Neutral to Minor Adverse
Alternative A2 (*Preferred Alternative*)	Neutral	Neutral to Minor Beneficial
Alternative B1	Neutral to Minor Beneficial	Neutral
Alternative B2 (*Preferred Alternative*)	Neutral	Neutral to Minor Beneficial
Alternative B3	Neutral to Minor Adverse	Minor Adverse
Alternative C1	Neutral	Neutral
Alternative C2	Neutral to Minor Adverse	Minor Adverse
Alternative C3	Minor Beneficial	Neutral
Alternative C4 (*Preferred Alternative*)	Neutral to Minor Beneficial	Neutral to Minor Beneficial
Alternative C5	Neutral to Minor Adverse	Neutral to Minor Adverse
Alternative D1	Neutral	Neutral
Alternative D2 (*Preferred Alternative*)	Neutral to Minor Beneficial	Minor Beneficial
Alternative D3	Neutral to Minor Adverse	Neutral to Minor Adverse

4.6 CUMULATIVE IMPACTS

A cumulative impact is an impact on the environment that results from the incremental impact of the preferred alternatives when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Cumulative impacts may also include the effects of natural processes and events, depending on the specific resource in question. Cumulative impacts include the total of all impacts to a particular resource that have occurred, are occurring, and would likely occur as a result of any action or influence, including the direct and reasonably foreseeable indirect impacts of a federal activity. The goal of this section is to describe the cumulative ecological, economic, and social impacts of past, present, and reasonably foreseeable future actions on shark fishermen and the environment, with regard to the management measures presented in this document.

Overall, the preferred alternatives in this EA would have neutral to minor beneficial cumulative ecological impacts for Atlantic blacknose sharks in the commercial fishery and Atlantic sharks in the recreational fishery. Although additional opportunities for the commercial harvest of Atlantic blacknose sharks would be introduced by Alternatives A2 and B2, the commercial quota is currently under harvested and the commercial quota would not change. Additionally, if

blacknose sharks continue to migrate north and fishermen operating north of 34°00' N. lat. interact with them at increasing rates, Alternatives A2 and B2 would reduce the number of blacknose sharks discarded dead. Any potential management changes, including inseason adjustments to the Atlantic blacknose shark commercial retention limit, would be based upon several factors and any resulting changes in harvest would be monitored to ensure the quota is not over harvested. Recreational fishery changes in preferred Alternatives C4 and D2 would increase protections for Atlantic shark species by allowing more timely management changes in response to over harvest. Specifically, Alternatives C4 and D2 could reduce the harvest of immature sharks and strengthen accountability measures in the recreational fishery, because NMFS would have the flexibility to adjust management measures (i.e., minimum size and retention limits) to increase or decrease fishing opportunities so quotas can be fully utilized without being over harvested.

Overall, the preferred alternatives in this EA would have neutral to minor beneficial cumulative social and economic impacts for Atlantic blacknose sharks in the commercial fishery and Atlantic sharks in the recreational fishery. Preferred Alternatives A2 and B2 increase fishing opportunities and flexibility in the Atlantic blacknose shark commercial fishery. Specifically, expanding the area where Atlantic blacknose sharks may be commercially fished for and retained, and establishing a flexible commercial retention limit for Atlantic blacknose sharks, increases opportunities to fully harvest the available quota and earn additional revenue on a per trip basis. A flexible commercial retention limit also allows NMFS to efficiently react to changes in the commercial shark fishery and implement inseason adjustments as needed to optimize the full utilization of the commercial quota without resulting in overharvest. In the recreational fishery, preferred Alternatives C4 and D2 would increase fishing opportunities for anglers to harvest mature individuals of authorized shark species and more sharks on a per-trip basis. Additionally, flexible recreational minimum size and retention limits strengthen accountability measures in the recreational fishery because they would allow NMFS to adjust management measures as needed to facilitate full utilization, while remaining within available quotas. However, the introduction of flexible recreational minimum size and retention limits could present challenges for anglers, NMFS, and enforcement. Flexible limits could lead to greater uncertainty at any given time, and could cause confusion for federal versus state permit holders. Furthermore, flexible limits could complicate efforts by the Atlantic States Marine Fisheries Commission and other state agencies to remain consistent with HMS regulations, and for enforcement to monitor and enforce those changes. However, because recreational limits would be modified infrequently, perhaps only once a year through the annual specifications process, these challenges are expected to be minor. Despite the expanded opportunities created under Alternatives C4 and D2, significant impacts are not expected given the catch-and-release nature of the recreational fishery.

Status quo, or No Action alternatives (A1 and B1) for Atlantic blacknose sharks in the commercial fishery, would have neutral to minor beneficial cumulative ecological impacts. While these No Action alternatives would not introduce any new management measures, some protections would be afforded to the blacknose shark population in the Atlantic region as a result of inaction because commercial fishing activities would not occur throughout the current extent

of the species range and the commercial quota would continue to be under harvested. However, fishermen will likely catch blacknose sharks as they fish for other species, including north of 34°00' N. lat., at increasing rates and thus an increasing number of blacknose sharks would be discarded dead. These dead discards are more likely to occur if fishermen who catch blacknose sharks cannot retain them under their existing fishing permit(s) and they are dissuaded from obtaining an applicable fishing permit due to the management boundary, or cannot retain all blacknose shark catch due to the status quo retention limit. Status quo, or No Action alternatives (C1 and D1) for Atlantic sharks in the recreational fishery, would have neutral ecological impacts, as no new management measures would be introduced, and there would be no impacts on the current level of fishing, catch rates, or distribution of fishing effort in the recreational shark fishery. Additionally, all of the status quo, or No Action alternatives (A1, B1, C1, and D1), would have neutral cumulative social and economic impacts, since commercial and recreational shark fishing would continue to operate under current conditions.

Other alternatives considered (B3, C2, C3, C5, and D3) would have minor cumulative adverse to minor cumulative beneficial ecological impacts for Atlantic blacknose sharks in the commercial fishery and Atlantic sharks in the recreational fishery. In the commercial fishery, the removal of the commercial retention limit for Atlantic blacknose sharks (Alternative B3) would remove an accountability measure to control the retention of blacknose sharks and could result in reaching and exceeding the quota early in the fishing year. However, the commercial quota has been underharvested for several years. In the recreational fishery, species-specific minimum size limits based on individual species' female size at maturity (Alternative C2), would provide additional protections for species that mature at lengths longer than 54 inches (137 cm) FL, but the chances of post-release mortality from increased handling for species identification and the unintentional illegal harvest of undersized sharks as a result of misidentification could increase. Grouping certain shark species together and establishing minimum size limits based on grouped species' female sizes at maturity (Alternative C3) would result in management measures that more closely reflect species' biology while reducing negative impacts associated with increased handling and species misidentification. The removal of recreational minimum size (Alternative C5) and retention (Alternative D3) limits would eliminate accountability measures in the recreational fishery to control harvest and could result in increased harvest of sharks. However, given the catch-and-release nature of the recreational shark fishery, impacts are expected to be minor.

Other alternatives considered (B3, C2, C3, C5, and D3) would have minor cumulative adverse to minor cumulative beneficial social and economic impacts for Atlantic blacknose sharks in the commercial fishery and Atlantic sharks in the recreational fishery. In the commercial fishery, the absence of a retention limit (Alternative B3) presents opportunities for increased revenue on a per-trip basis, but could result in an early fishery closure if the quota is reached and/or exceeded quickly. Removal of the commercial retention limit could contribute to inequitable fishing opportunities, if fishing vessels are not equipped to store higher volumes of fish. Additionally, the removal of an accountability measure limits NMFS' ability to control harvest and prevent overharvest and/or early fishery closure. In the recreational fishery, under species-specific minimum size limits based on individual species' female size at maturity (Alternative C2),

anglers and enforcement would be faced with more complex regulations. Grouping certain shark species together and establishing minimum size limits based on grouped species' female sizes at maturity (Alternative C3) would increase opportunities to harvest some species that mature below the current minimum size limit (i.e., blacktip sharks) and decrease opportunities to harvest species that mature above the current minimum size limit (i.e., pelagic sharks). If recreational minimum size (Alternative C5) and retention (Alternative D3) limits are removed, anglers would benefit from the increased opportunity to harvest authorized shark species and simplified management. However, the removal of minimum size and retention limits would eliminate the only accountability measures in the recreational fishery and limit NMFS ability to control harvest. Despite the additional opportunities afforded through simplified management, impacts are expected to be minimal given the catch-and-release nature of the recreational fishery.

In January 2023, NMFS finalized Amendment 14, which established a new framework for the establishment of ABCs and ACLs for Atlantic shark fisheries. Amendment 14 did not contain a proposed or final rule, regulatory text, or change any fishery quotas. In May 2023, NMFS initiated scoping for Amendment 16, which could result in substantial changes to commercial and recreational shark fisheries including changes to commercial and recreational shark quotas, shark management groups, shark retention limits, and shark minimum size limits, based upon the framework established in Amendment 14. Any implementing regulations under Amendment 16 could affect management measures for any non-prohibited shark species, including Atlantic blacknose sharks in the commercial fishery and authorized shark species in the recreational fishery. Amendment 16, and any other rulemaking implementing provisions from Amendment 14, would be finalized after this rulemaking and would consider the cumulative impacts from this action.

In April 2024, NMFS announced their intent to initiate Amendment 17 to update HMS EFH descriptions and designations, following completion of the Final HMS EFH 5-Year Review (89 FR 27716, April 18, 2024). The HMS EFH 5-Year Review identified recent studies that support updating EFH for most Atlantic shark species. Additionally, based on the recommendations identified in the Final HMS EFH 5-Year Review, in Amendment 17, NMFS will consider a new Habitat Area of Particular Concern for juvenile white sharks in the New York Bight.

In May 2024, NMFS announced the availability of a scoping document (89 FR 36763, May 3, 2024) to consider potential changes to the gear regulations in HMS. While management measures implemented since 1999 have helped achieve fishery management and conservation goals, the combination of over two decades of gear-specific measures may have had unanticipated consequences. Changes in species distribution, fishing gears, fishing techniques, market conditions, and fishing interests may warrant a reexamination of some gear-specific management measures to see if they are still meeting applicable goals. A future rulemaking implementing any HMS fishing gear modifications may affect how sharks interact with commercial and recreational HMS fisheries.

Also in May 2024, NMFS released a final environmental impact statement for Amendment 15 to the HMS FMP and the Environmental Protection Agency published a notice of availability for the final environmental impact statement (89 FR 40481, May 10, 2024). Amendment 15, among

other things, considers the modification, data collection, and assessment of four spatial management areas that restrict commercial longline fishing (Mid-Atlantic Shark, Charleston Bump, East Florida Coast, and DeSoto Canyon closed areas). To address the lack of fishery-dependent data inside these closed areas and to assess their effectiveness, Amendment 15 considers potential modifications to the boundaries and/or timing of the closed areas, data collection programs in the high- and low-bycatch-risk areas, and a process for routine evaluation of spatial management areas to identify whether conservation and management needs are being met. Although the commercial shark fishery would be affected by any changes to the Mid-Atlantic Shark bottom longline closed area, because Atlantic blacknose sharks are not caught in the Mid-Atlantic Shark bottom longline closed area, Amendment 15 is not expected to impact this rule.

In September 2024, NMFS announced a proposed rule (89 FR 72796, September 6, 2024) that would modify or expand reporting requirements for HMS, including reporting by commercial and recreational vessel owners holding HMS permits and by HMS dealers. Overall, the intent of this rulemaking is to streamline HMS reporting for recreational and commercial fisheries consistent with the "One Stop Reporting" initiative for HMS, Greater Atlantic Region, and Southeast Region fisheries. The intent of the "One Stop Reporting" initiative is to expand capabilities for the submission of a single electronic report to satisfy overlapping reporting requirements of vessel owners holding permits in multiple regions. In addition to requiring electronic submission for all HMS reporting, this proposed rule would consider options to expand information reported and timing of reporting. These modifications to reporting requirements could assist with implementation of this rule once finalized.

In July 2022, NMFS established a shortfin mako shark retention limit of zero in the commercial and recreational HMS fisheries, consistent with the management measure adopted in 2021 by ICCAT recommendation (87 FR 39373, July 1, 2022). ICCAT anticipates assessing the stock status of shortfin mako sharks in 2025, and based on the results of that stock assessment, among other factors, the retention limit for shortfin mako sharks may be increased above zero for commercial and/or recreational HMS fisheries. If a retention limit greater than zero is implemented for the recreational fishery, the recreational shortfin mako shark fishing restrictions in effect prior to this final rule would again also apply. In Amendment 11 (84 FR 5358, February 21, 2019), NMFS implemented recreational minimum size limits for the retention of shortfin mako sharks by recreational HMS permit holders of 71 inches (180 cm) FL for male and 83 inches (210 cm) FL for female shortfin mako sharks. In Amendment 2, (73 FR 35778, June 24, 2008, corrected at 73 FR 40658, July 15, 2008), NMFS implemented recreational retention limits for sharks, which included a retention limit of one shark (including shortfin mako shark) from the list at § 635.22(c)(2) per vessel per trip.

Additionally, there has been increasing offshore development in the Atlantic Ocean. Potential effects of offshore development on HMS fisheries will depend on the extent of overlap between offshore project sites and fishing effort in space and time. For example, pelagic and bottom longline fishing will likely not be possible within offshore wind farms due to the close spacing of turbines (~1 mile). However, given that the current lease areas are located within areas where normal commercial pelagic longline fishing is limited, the socioeconomic impacts are likely to

be neutral, with limited user conflicts. There may be more potential overlap with HMS bottom longline fishing in the current lease areas, but fishing effort in that area is also low.

NMFS is not aware of any other reasonable foreseeable future actions that would affect the shark fisheries or have impacts in the areas affected by this rule.

5 Mitigation and Unavoidable Adverse Impacts

Mitigation is an important mechanism that federal agencies can use to minimize, prevent, or eliminate damage to the human and natural environments associated with their actions. Agencies can use mitigation to reduce environmental impact in several ways. Mitigation efforts may include one or more of the following: avoiding the impact by not taking a certain action or parts of an action; minimizing impacts by limiting the degree or magnitude of the action and its implementation; rectifying the impact by repairing, rehabilitating, or restoring the affected environment; reducing or eliminating the impact over time through preservation and maintenance operations during the life of the action; and compensating for the impact by replacing or providing substitute resources or environments. The mitigation measures discussed in an EA must cover the range of impacts of the proposal and must be considered even for impacts that by themselves would not be considered "significant." If a proposed action is considered as a whole to have significant effects, all of its specific effects on the environment must be considered, and mitigation measures must be developed where it is feasible to do so. NMFS may consider mitigation, provided that the mitigation efforts do not circumvent the goals and objectives of the rulemaking or the mandate to rebuild fisheries under the Magnuson-Stevens Act.

5.1 UNAVOIDABLE ADVERSE IMPACTS

In general, there are no unavoidable adverse ecological impacts expected as a result of the preferred alternatives. NMFS does not expect significant changes in current fishing practices or an increase in fishing effort due to the removal of the blacknose shark management boundary in the Atlantic region, a flexible commercial retention limit for blacknose sharks in the Atlantic region, flexible recreational minimum size limits for authorized shark species, or flexible recreational retention limits for authorized shark species. The action would not modify fishing behavior or gear type, nor would it expand fishing effort because commercial and recreational fishermen fishing exclusively for sharks would still be authorized to retain shark species subject to current regulations. Thus, the preferred alternatives would not be expected to change previously analyzed endangered species or marine mammal interaction rates or magnitudes, or substantially alter current fishing practices or bycatch mortality rates.

5.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

No irreversible or irretrievable commitments of resources are expected as a result of the proposed action.

6 Regulatory Impact Review

NMFS conducts a Regulatory Impact Review for all regulatory actions that are of public interest in order to comply with E.O. 12866. The Regulatory Impact Review provides, for each alternative, an analysis of the economic benefits and costs to the applicable fishery(ies) and the nation as a whole. The information contained in Chapter 6, taken together with the data and analyses incorporated by reference, comprise the complete Regulatory Impact Review for this proposed action.

The requirements for all regulatory actions specified in E.O.12866 are summarized in the following statement from the order:

> *In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits should be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nonetheless essential to consider. Further, in choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.*

E.O. 12866 further requires the Office of Management and Budget to review proposed regulations that are considered to be "significant." A significant regulatory action is one that is likely to:

- Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal manages, the President's priorities, or the principles set forth in this Executive Order.

6.1 DESCRIPTION OF MANAGEMENT OBJECTIVES

Please see Chapter 1 for a description of the objectives of this rulemaking.

6.2 DESCRIPTION OF FISHERY

Please see Chapter 3 for a description of the fisheries that could be affected by these management actions.

6.3 STATEMENT OF PROBLEM

Please see Chapter 1 for a description of the problem and need for this rulemaking.

6.4 DESCRIPTION OF EACH ALTERNATIVE

Please see Chapter 2 for a summary of each alternative suite and Chapter 4 for a complete description of each alternative and its expected ecological, social, and economic impacts.

6.5 ECONOMIC ANALYSIS OF EXPECTED EFFECTS OF EACH ALTERNATIVE RELATIVE TO THE BASELINE

Table 6.1 summarizes the net economic benefits and costs of each of the alternatives analyzed in this EA. Additional details and more complete analyses are provided in Chapter 4.

6.6 CONCLUSION

As noted above, under E.O. 12866, a regulation is a "significant regulatory action" if it is likely to: (1) have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order. Pursuant to the procedures established to implement section 6 of E.O. 12866, the Office of Management and Budget has determined that this action is not significant. A summary of the expected net economic benefits and costs of each alternative, which are based on supporting text in Chapter 4, can be found in Table 6.1.

Table 6.1 Net economic benefits and costs of alternatives.

Alternative	Economic Benefits	Economic Costs
Alternative A1: Keep the blacknose shark management boundary in the Atlantic region. – No Action	This alternative would have neutral economic benefits since fishing rates and effort are not expected to change.	This alternative would have neutral economic costs since fishing rates and effort are not expected to change. However, this alternative may result in missed economic opportunities for Directed and Incidental shark permit holders operating in the Atlantic region, because they would not be able to generate revenue from sales of blacknose sharks north of the blacknose shark management boundary.
Alternative A2: Remove the blacknose shark management boundary in the Atlantic region. – *Preferred Alternative*	This alternative may have minor economic benefits because Directed and Incidental shark permit holders operating north and south of 34°00' N. lat. would have expanded opportunities to harvest blacknose sharks caught anywhere in the Atlantic region. The blacknose shark quota has been under harvested for several years, and as a result, from 2017 through 2022, there was an average of $34,138 in unrealized revenue per year. This alternative may further optimize the commercial fishery's ability to fully utilize the available blacknose shark quota and earn additional income from the sale of blacknose sharks.	This alternative may have minor economic costs if the harvest of blacknose sharks in the entire Atlantic region results in reaching and/or exceeding the commercial quota earlier in the fishing year, necessitating early fishery closure.
Alternative B1: Keep the current commercial retention limit for blacknose sharks in the Atlantic region. - No Action	This alternative would have neutral economic benefits since fishing rates and effort are not expected to change.	This alternative may result in missed economic opportunities for Directed shark permit holders if the status quo retention limit is restricting the commercial fishery's ability to fully harvest the available blacknose shark quota. Additionally, there may be some administrative costs, if NMFS determined that changes were needed to the commercial retention limit as NMFS would have to conduct a full rulemaking.
Alternative B2: Establish a flexible commercial retention limit for blacknose sharks in the Atlantic region. - *Preferred Alternative*	This alternative may have minor economic benefits, as Directed shark permit holders operating in the Atlantic region would be able to retain more blacknose sharks per vessel per trip under the default commercial retention limit, and generate additional revenue from those sales on a per-trip basis. Any changes to the commercial retention limit during the year, and subsequent effects to trip revenue, may result in additional economic opportunities on a per-trip basis (if the retention limit is increased above the default) or by allowing the commercial fishery to	This alternative may have minor economic costs on a per-trip basis if the commercial retention limit is set below the default commercial retention limit. However, because the commercial quota would remain unchanged, and a lower retention limit could extend the commercial fishing year, effects on total potential annual revenue would likely be minimal. Additionally, a retention limit set above the default could result in reaching and/or exceeding the commercial quota earlier in the fishing year and necessitate early fishery closure. Although there

	remain open further into the fishing year (if the retention limit is decreased below the default).	may be some administrative costs associated, if NMFS determined that changes were needed to the commercial retention limit, those costs would be smaller than the administrative cost of completing a full rulemaking.
Alternative B3: Remove the commercial retention limit for blacknose sharks in the Atlantic region.	This alternative may have minor economic benefits, as Directed shark permit holders operating in the Atlantic region would not be limited by a per trip retention limit for blacknose sharks and may therefore generate additional revenue from those sales on a per-trip basis, potentially boosting profits.	This alternative may have minor economic costs, because the absence of a retention limit could result in reaching and/or exceeding the commercial quota earlier in the fishing year and necessitate early fishery closure. An early fishery closure could limit opportunities to fish (and therefore earn revenue) year round. Additionally, landing more blacknose sharks in a shorter period could result in lower prices if demand for the product is insufficient during that time interval.
Alternative C1: Keep the current recreational minimum size limits for sharks. - No Action	This alternative would have neutral economic benefits since fishing rates and effort are not expected to change.	This alternative may result in missed economic opportunities to retain shark species that mature at a smaller size than or rarely exceed the current minimum size limit.
Alternative C2: Establish recreational minimum size limits for sharks based on each species' female size at maturity.	This alternative may have minor economic benefits in increased opportunities for anglers who retain sharks that mature at a smaller size than the current recreational minimum size limit. Additionally, there could be unquantified benefits to the public associated with reduced mortality of immature shark species, and in the long term, this could support healthy stocks that would facilitate better harvest opportunities in the future.	This alternative may have minor economic costs in missed opportunities for anglers who retain sharks that mature at a larger size than the current recreational minimum size limit. Additionally, this alternative requires anglers to identify sharks at the species level, and if prohibited or undersized sharks are unintentionally retained due to misidentification, a civil penalty could be assessed.
Alternative C3: Establish recreational minimum size limits for shark groups based on grouped species' female sizes at maturity.	This alternative may have minor economic benefits in increased opportunities for anglers who retain sharks that mature at a smaller size than the current recreational minimum size limit. Additionally, there could be unquantified benefits to the public associated with reduced mortality of immature shark species, and in the long term, this could support healthy stocks that would facilitate better harvest opportunities in the future.	This alternative may have minor economic costs in missed opportunities for anglers who currently retain sharks that mature at a larger size than the current recreational minimum size limit.
Alternative C4: Establish flexible recreational minimum size limits for shark groups based on grouped species' female sizes at maturity. - *Preferred Alternative*	This alternative may have minor economic benefits in increased opportunities for anglers who retain sharks that mature at a smaller size than the current recreational minimum size limit. If the recreational minimum size limit is reduced below the default, further economic benefits may be realized. Additionally, there could be unquantified	This alternative may have minor economic costs if recreational minimum size limits are increased above the default, since anglers would have decreased opportunities to catch and retain those shark species. There also may be some administrative costs associated with the agency

	benefits to the public associated with reduced mortality of immature shark species, and in the long term, this reduction in mortality could support healthy stocks that would facilitate better harvest opportunities in the future.	having to periodically analyze and change the recreational minimum size limits for shark groups.
Alternative C5: Remove recreational minimum size limits for sharks.	This alternative may have minor economic benefits, since anglers could harvest authorized shark species of any size.	This alternative may have minor economic costs, if harvest rates are so high that it results in a fishery closure.
Alternative D1: Keep the current recreational retention limits for sharks. - No Action	This alternative would have neutral economic benefits since fishing rates and effort are not expected to change.	This alternative may have minor economic costs in missed opportunities for anglers to retain more sharks on a per vessel per trip basis.
Alternative D2: Establish flexible recreational retention limits for sharks. - *Preferred Alternative*	This alternative may have minor economic benefits, since anglers would have increased opportunities to catch and retain sharks (particularly those that would have separate recreational retention limits, e.g., blacktip sharks). These opportunities could be further expanded if the recreational retention limits are increased above the default. Additionally, higher recreational retention limits could increase opportunities for HMS Charter/Headboat permit holders to offer more attractive offshore shark trips given the potentially higher retention limits, and thus potentially earn more revenue from higher priced charters.	This alternative may have minor economic costs if recreational retention limits are decreased below the default, since anglers would have decreased opportunities to catch and retain those shark species. There also may be some administrative costs associated with the agency having to periodically analyze and change the recreational retention limits for sharks.
Alternative D3: Remove recreational retention limits for sharks.	This alternative may have minor economic benefits, because recreational shark harvest would not be limited by retention limits. Additionally, the absence of recreational retention limits may increase opportunities for HMS Charter/Headboat permit holders to offer more attractive offshore shark trips since they would not be limited by number of sharks per trip retention limit, and thus earn more revenue from higher priced charters.	This alternative may have minor economic costs, if harvest rates are so high that it results in overfishing and/or a fishery closure. However, the likelihood of overfishing or fishery closure is low, given the catch and release nature of the recreational shark fishery.

7 Initial Regulatory Flexibility Act

This IRFA is conducted to comply with the RFA (5 U.S.C. 601 *et seq*.). The goal of the RFA is to minimize the economic burden of federal regulations on small entities. To that end, the RFA directs federal agencies to assess whether a proposed regulation is likely to result in significant economic impacts to a substantial number of small entities, and identify and analyze any significant alternatives to the proposed rule that accomplish the objectives of applicable statutes and minimize any significant effects on small entities. Certain data and analysis required in an IRFA are also included in other chapters of this document. Therefore, this IRFA incorporates by reference the economic analyses and impacts in Chapter 4 of this document.

7.1 DESCRIPTION OF THE REASONS WHY ACTION IS BEING CONSIDERED

Per section 603(b)(1) of the RFA, the purpose of this proposed rulemaking is to increase management flexibility to react to changes in the Atlantic shark fisheries and optimize the ability of the commercial and recreational shark fisheries to harvest available quota to the extent practicable. Please see Chapter 1 for a full description of the reasons why this action is being considered.

7.2 STATEMENT OF THE OBJECTIVES OF, AND LEGAL BASIS FOR, THE PROPOSED RULE

Section 603(b)(2) of the RFA requires agencies to state the objective of, and legal basis for the proposed action. Please see Chapter 1 for a full description of the objectives of, and legal basis for this action.

7.3 DESCRIPTION AND ESTIMATE OF THE NUMBER OF SMALL ENTITIES TO WHICH THE PROPOSED RULE WILL APPLY

Section 603(b)(3) of the RFA requires agencies to provide an estimate of the number of small entities to which the rule would apply. The Small Business Administration (SBA) has established size criteria for all major industry sectors in the United States, including fish harvesters. Provision is made under SBA's regulations for an agency to develop its own industry-specific size standards after consultation with Advocacy and an opportunity for public comment (see 13 CFR § 121.903(c)). Under this provision, NMFS may establish size standards that differ from those established by the SBA Office of Size Standards, but only for use by NMFS and only for the purpose of conducting an analysis of economic effects in fulfillment of the agency's obligations under the RFA. To utilize this provision, NMFS must publish such size standards in the Federal Register, which NMFS did on December 29, 2015 (80 FR 81194). In that final rule, effective on July 1, 2016, NMFS established a small business size standard of $11 million in annual gross receipts for all businesses in the commercial fishing industry (NAICS 11411) for RFA compliance purposes. NMFS considers all HMS permit holders to be small entities because they had average annual receipts of less than $11 million for commercial fishing. SBA has established size standards for all other major industry sectors in the United States, including the scenic and sightseeing transportation (water) sector (NAICS code 487210, for-hire), which includes charter/party boat entities. SBA has defined a small charter/party boat entity as one with average annual receipts (revenue) of less than $14 million.

As discussed in Chapter 3, the proposed rule would apply to the 188 Shark Directed LAP holders, 221 Shark Incidental LAP holders, 4,324 HMS Charter/Headboat permit holders, and 3,471 Atlantic Tunas General category and Swordfish General Commercial permit holders. The HMS Charter/Headboat permit holders have 3,085 shark endorsements and 2,014 commercial sale endorsements; and the Atlantic Tunas General category and Swordfish General Commercial permit holders have 1,709 shark endorsements. This proposed rule would also affect HMS Angling permit holders, but those permit holders are considered individuals and not small entities under RFA. NMFS considers all HMS permit holders, both commercial and for-hire, to be small entities because they have average annual receipts of less than their respective sector's standard of $11 million and $14 million. NMFS has determined that the proposed rule would not likely affect any small governmental jurisdictions. More information regarding the description of the fisheries affected, and the categories and number of permit holders can be found in HMS SAFE Report.

7.4 DESCRIPTION OF THE PROJECTED REPORTING, RECORDKEEPING, AND OTHER COMPLIANCE REQUIREMENTS OF THE PROPOSED RULE, INCLUDING AN ESTIMATE OF THE CLASSES OF SMALL ENTITIES WHICH WILL BE SUBJECT TO THE REQUIREMENTS OF THE REPORT OR RECORD

Section 603(b)(4) of the RFA requires agencies to describe any new reporting, record-keeping and other compliance requirements. The action does not contain any new collection of information, reporting, or record-keeping requirements. The alternatives considered would remove the blacknose shark management boundary in the Atlantic region, modify the commercial retention limit for blacknose sharks in the Atlantic region, revise the recreational minimum size limits for Atlantic shark species, and revise the recreational retention limits for Atlantic shark species.

7.5 IDENTIFICATION OF ALL RELEVANT FEDERAL RULES WHICH MAY DUPLICATE, OVERLAP, OR CONFLICT WITH THE PROPOSED RULE

Under section 603(b)(5) of the RFA, agencies must identify, to the extent practicable, relevant federal rules which duplicate, overlap, or conflict with the proposed action. Fishermen, dealers, and managers in these fisheries must comply with a number of international agreements, domestic laws, and other fishery management measures. These include, but are not limited to, the Magnuson-Stevens Act, ATCA, the High Seas Fishing Compliance Act, MMPA, ESA, NEPA, the Paperwork Reduction Act, and the CZMA. This proposed action has been determined not to duplicate, overlap, or conflict with any federal rules.

7.6 DESCRIPTION OF ANY SIGNIFICANT ALTERNATIVES TO THE PROPOSED RULE THAT ACCOMPLISH THE STATED OBJECTIVES OF APPLICABLE STATUTES AND THAT MINIMIZE ANY SIGNIFICANT ECONOMIC IMPACT OF THE PROPOSED RULE ON SMALL ENTITIES

One of the requirements of an IRFA is to describe any significant alternatives to the proposed rule which accomplish the stated objectives of applicable statutes and which minimize any

significant economic impact of the proposed rule on small entities. The analysis shall discuss significant alternatives such as: 1) establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; 2) clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities; 3) use of performance rather than design standards; and 4) exemptions from coverage of the rule, or any part thereof, for small entities. These categories of alternatives are described at 5 U.S.C. § 603(c)(1)-(4). NMFS examined each of these categories of alternatives. Regarding the first, second, and fourth categories, NMFS cannot establish differing compliance or reporting requirements for small entities or exempt small entities from coverage of the rule or parts of it because all of the businesses impacted by this rule are considered small entities and thus the requirements are already designed for small entities. NMFS does not know of any performance or design standards that would satisfy the aforementioned objectives of this rulemaking while, concurrently, complying with the Magnuson-Stevens Act. As described below, NMFS analyzed several different alternatives in this proposed rulemaking, and provides rationales for identifying the preferred alternatives to achieve the desired objectives. The alternatives considered and analyzed are described below. The IRFA assumes that each vessel will have similar catch and gross revenues to show the relative impact of the proposed action on vessels.

7.6.1 BLACKNOSE SHARK MANAGEMENT BOUNDARY IN THE ATLANTIC REGION ALTERNATIVES

Under Alternative A1, the No Action alternative, NMFS would continue management based on the current blacknose shark management boundary in the Atlantic region. Currently, blacknose sharks may only be commercially harvested south of 34°00' N. lat. by vessels issued a Directed or Incidental shark LAP. Vessels issued a Directed or Incidental shark LAP would not be allowed to retain blacknose sharks north of 34°00' N. lat. Thus, Alternative A1 would not result in any additional economic impact for HMS permit holders, and would have neutral economic impacts on the small entities participating in this fishery.

Under Alternative A2 (preferred), NMFS would remove the blacknose shark management boundary and allow blacknose sharks to be commercially harvested in the entire Atlantic region by vessels issued a Directed or Incidental shark LAP. This alternative would expand fishing opportunities for commercial vessels issued a Directed or Incidental Shark LAP, including those that operate north and south of 34°00' N. lat., as they would be able to fish for and retain blacknose sharks caught anywhere in the Atlantic region. This is particularly significant, given that the commercial quota is under harvested (from 2017 through 2022, on average only 36.3 percent of the quota was utilized), and the stock's range is expanding further northward along the Atlantic coast. Thus, Alternative A2 would have minor beneficial economic impacts on the small entities participating in the fishery, as they would further optimize the commercial fishery's ability to fully utilize the available quota and earn additional income from the sale of blacknose sharks.

7.6.2 BLACKNOSE SHARK COMMERCIAL RETENTION LIMIT IN THE ATLANTIC REGION ALTERNATIVES

Under Alternative B1, the No Action alternative, NMFS would maintain the current commercial retention limit of eight blacknose sharks per vessel per trip for vessels issued a Directed shark LAP in the Atlantic region. Alternative B1 would not result in any change in fishing effort, and would have neutral economic impacts on the small entities participating in the fishery.

Under Alternative B2 (preferred), NMFS would establish a flexible commercial retention limit of 0 to 60 blacknose sharks per vessel per trip for vessels issued a Directed shark LAP in the Atlantic region. The default commercial retention limit that would apply at the start of each fishing year would be 25 blacknose sharks per vessel per trip. The commercial retention limit could be adjusted during the fishing year based on the inseason trip limit adjustment criteria at § 635.24(a)(8). Under this alternative, the potential gross revenue for each vessel that has landed the default retention limit for blacknose sharks would be approximately $402 per vessel per trip, with gross revenue per trip from blacknose sharks ranging from approximately $0 to $964 under the 0-to-60 blacknose shark commercial retention limit, respectively (Table 4.5). A higher default commercial retention limit for blacknose sharks would provide new economic benefits to Directed shark LAP holders. While revenue could increase on a per trip basis, the total potential revenue per year available to the entire fleet would not change because the blacknose shark commercial quota would not change. Thus, preferred Alternative B2 would likely result in neutral to minor beneficial economic impacts on the small entities participating in this fishery since the default commercial retention limit is set above the status quo commercial retention limit, which would result in Directed shark LAP holders realizing higher trip revenues by selling more blacknose sharks per trip. The impacts could be minor adverse if the commercial quota is harvested and the fishery closes early in the year. However, an early fishery closure is unlikely because NMFS would actively monitor the quota and if catch rates are high, NMFS could reduce the retention limit to extend the commercial fishery.

Under Alternative B3, NMFS would remove the commercial retention limit for blacknose sharks in the Atlantic region. For commercial vessels issued a Directed shark LAP, there would be no trip limit for blacknose sharks, as long as catch rates remain within the available blacknose shark quota. Based on average ex-vessel prices from 2017 through 2022 ($1.41 per pound dressed weight), the commercial fleet earned an average of $19,394 in revenue per year from blacknose sharks. During the same time, on average only 36.3 percent of the quota was harvested by an average of 17 active vessels (78 percent of the landings were from five vessels). Fully harvesting the blacknose shark commercial quota could result in an estimated annual total fleet revenue of approximately $53,532 and an individual vessel revenue of approximately $3,149 (across the fleet) or approximately $10,706 (for the top five vessels). However, the opportunity to retain blacknose sharks without a retention limit could lead to a faster harvest of the available commercial quota and an early fishery closure. This may create a sense of urgency for Directed shark LAP holders to harvest the quota as quickly as possible. Furthermore, removing the commercial retention limit would eliminate an accountability measure for ensuring equitable fishing opportunities for all Directed shark LAP holders. Thus, Alternative B3 would likely

result in minor adverse economic impacts on the small entities participating in this fishery because the absence of a commercial retention limit could result in reaching and/or exceeding the commercial quota earlier in the fishing year and necessitate early fishery closure, which could limit opportunities to earn revenue from blacknose sharks year round.

7.6.3 RECREATIONAL MINIMUM SIZE LIMIT ALTERNATIVES

The recreational minimum size limit alternatives considered in this proposed rule apply to HMS Angling and HMS Charter/Headboat permit holders, and Atlantic Tunas General category and Swordfish General Commercial permit holders when participating in a registered HMS tournament. HMS Angling permit holders are not considered to be small entities under RFA. Small entity impacts from the recreational minimum size limit alternatives would primarily be associated with HMS Charter/Headboat permit holders, and to a less extent, the occasional participation of Atlantic Tunas General category and Swordfish General Commercial permit holders in registered HMS tournaments.

Under Alternative C1, the No Action alternative, NMFS would maintain the current recreational minimum size limits for sharks, as follows: all sharks, unless otherwise specified, must be at least 54 inches (137 cm) FL; all hammerhead sharks must be at least 78 inches (198.1 cm) FL; and there is no size limit for Atlantic sharpnose, bonnethead, or smoothhound sharks. Alternative C1 would not result in any change in fishing effort, and would have neutral economic impacts on the small entities, primarily HMS Charter/Headboat permit holders, participating in the fishery.

Under Alternative C2, NMFS would establish recreational minimum size limits that are specific to the female size at maturity for each species. While this alternative would increase opportunities to harvest shark species that mature at lengths shorter than the current recreational minimum size limit, there would be decreased opportunities to harvest shark species that mature at lengths longer than the current minimum size limit. Additionally, charter crew would need to keep track of a large number of minimum size limits and identify each shark to the species level. If a prohibited or undersized shark is retained due to misidentification or other reasons, a civil penalty could be assessed. Thus, Alternative C2 could have minor adverse economic impacts on the small entities participating in the fishery.

Under Alternative C3, NMFS would group certain shark species together and set a recreational minimum size limit for each group, based on a midpoint value for the female sizes at maturity for the shark species in that group. Similar to Alternative C2, this alternative would increase opportunities to harvest shark species that mature at lengths shorter than the current recreational minimum size limit, and reduce opportunities to harvest shark species that mature at lengths longer than the current minimum size limit. Also similar to Alternative C2, this alternative would require charter crew to track a larger number of minimum size limits compared to the status quo and to identify sharks at the species level, which could result in increased unintentional illegal harvest of undersized individuals due to misidentification. However, by grouping species together, this alternative would simplify management compared to Alternative C2 while reducing the harvest of immature or misidentified sharks. Thus, Alternative C3 would have neutral economic impacts on the small entities participating in the fishery.

Under Alternative C4 (preferred), NMFS would group certain shark species together and establish flexible recreational minimum size limits for each group. Default recreational minimum size limits would be based on a midpoint value of the female sizes at maturity for the shark species in that group, or be consistent with current HMS regulations. Specifically, NMFS would revise the default recreational minimum size limits for shark groups where the midpoint value of the female sizes at maturity for the shark species in that group is smaller than the current default recreational retention limit for those species. This alternative would increase opportunities to harvest shark species that mature at lengths shorter than the current recreational minimum size limit, and if minimum size limits are reduced below the default, further opportunities for harvest may be realized. However, if minimum size limits are increased above the default, there would be decreased opportunities to harvest those shark species. Thus, Alternative C4 would have neutral to minor beneficial economic impacts on the small entities participating in the fishery.

Under Alternative C5, NMFS would remove recreational minimum size limits for shark species and thus allow the retention of recreationally authorized shark species of any size. While the absence of recreational minimum size limits would increase opportunities for shark harvest, high rates of harvest would risk a fishery closure. However, given the catch-and-release nature of the recreational shark fishery, substantial increases in shark harvest rates are unlikely. Additionally, removing recreational minimum size limits would eliminate an accountability measure to control harvest levels, and a management tool to aid in rebuilding some shark species by allowing sharks to be harvested before they reach maturity, which could impact fishing opportunities in the future. Thus, Alternative C5 would have minor adverse to neutral economic impacts on the small entities participating in the fishery.

7.6.4 RECREATIONAL RETENTION LIMIT ALTERNATIVES

The recreational retention limit alternatives considered in this proposed rule apply to HMS Angling and HMS Charter/Headboat permit holders, and Atlantic Tunas General category and Swordfish General Commercial permit holders when participating in a registered HMS tournament. HMS Angling permit holders are not considered to be small entities under RFA. Small entity impacts from recreational minimum size limit alternatives would primarily be associated with HMS Charter/Headboat permit holders, and to a less extent, the occasional participation of Atlantic Tunas General category and Swordfish General Commercial permit holders in registered HMS tournaments.

Under Alternative D1, the No Action alternative, NMFS would maintain the current recreational retention limits. The current recreational retention limit allows one shark from the following list per vessel per trip: Atlantic blacktip, Gulf of America blacktip, bull, great hammerhead, scalloped hammerhead, smooth hammerhead, lemon, nurse, spinner, tiger, blue, common thresher, porbeagle, Atlantic sharpnose, finetooth, Atlantic blacknose, Gulf of America blacknose, and bonnethead. Additionally, there is a recreational retention limit of one shark per person per trip for Atlantic sharpnose and bonnethead. There is no recreational retention limit for smoothhound sharks. Alternative D1 would not result in any change in fishing effort, and would have neutral economic impacts on the small entities participating in the fishery.

Under Alternative D2 (preferred), NMFS would establish flexible recreational retention limits for sharks. Default recreational retention limits would be consistent with current HMS regulations, except for Atlantic sharpnose, bonnethead, and blacktip sharks, which will have separate default recreational retention limits on a per vessel per trip basis. This alternative would increase opportunities to harvest sharks, particularly those species that would have separate recreational retention limits (e.g., blacktip sharks). These opportunities would be further expanded if the recreational retention limits are increased above the default limits; conversely, opportunities could be decreased if the retention limits are lowered below the default limits. Additionally, higher recreational retention limits would increase opportunities for HMS Charter/Headboat permit holders to offer more attractive offshore shark trips (particularly for pelagic sharks) given the potentially higher retention limits, and thus potentially earn more revenue from higher priced charters and/or greater demand for charter trips. Thus, Alternative D2 would likely result in minor beneficial economic impacts on the small entities providing for-hire fishing trips in the fishery.

Under Alternative D3, NMFS would remove recreational retention limits for sharks, allowing the retention of an unlimited number of sharks on a per-trip basis. This alternative would increase opportunities to harvest sharks. Additionally, the absence of recreational retention limits would increase opportunities for HMS Charter/Headboat permit holders to offer more attractive offshore shark trips (particularly for pelagic sharks) without retention limits, and thus potentially earn more revenue from higher priced charters and/or greater demand for charter trips. Increased opportunities to potentially increase for-hire revenue, would potentially be offset by a fishery closure if harvest levels exceed the available quotas. However, without recreational retention limits, NMFS would be unable to control harvest levels in the recreational shark fishery and high catch rates could lead to fishery closures. Closures in the recreational shark fishery could have negative economic impacts, particular for HMS Charter/Headboat permit holders. Thus, Alternative D3 would have neutral to minor adverse economic impacts on the small entities participating in the fishery.

8 Applicable Laws

While this document comprehensively analyzes the alternatives considered for all the requirements under applicable laws and executive orders, this chapter provides summaries of how this action complies with various statutes or executive orders that were not discussed in earlier chapters. These include parts of the Magnuson-Stevens Act, E.O. 13132, and the CZMA.

8.1 MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

NMFS has determined that this proposed action is consistent with the Magnuson-Stevens Act and other applicable laws. The analyses in this document are consistent with the Magnuson-Stevens Act National Standards (NS) (see 50 CFR Part 600, Subpart D for National Standard Guidelines), and subject to further consideration after public comment.

NS1 requires NMFS to prevent overfishing while achieving, on a continuing basis, optimum yield from each fishery for the U.S. fishing industry. As summarized in other chapters and in recent documents, over the past several years, NMFS has undertaken numerous management actions to address overfishing and rebuild shark stocks, including the HMS FMP and the following amendments to the HMS FMP: Amendment 2 (73 FR 40657, July 7, 2008), Amendment 3 (76 FR 70064, November 10, 2011), Amendment 5 and 5b (78 FR 40317, July 3, 2013), Amendment 6 (79 FR 30064, May 27, 2014), Amendment 9 (79 FR 46217, August 7, 2014), Amendment 11 (84 FR 5358, February 21, 2019), and Amendment 14 (88 FR 4157, January 24, 2023). The preferred alternatives in this document are consistent with NS1 as they would build upon management efforts to rebuild, manage, and conserve target species in accordance with Magnuson-Stevens Act requirements and the NS1 guidelines. The preferred alternatives are not expected to have significant impacts on the allowable level of fishing pressure, catch rates, or distribution of fishing effort. However, the preferred alternatives aim to increase management flexibility to react to changes in the Atlantic shark fisheries and optimize the ability of the commercial and recreational shark fisheries to harvest available quota to the extent practicable. In particular, the flexibility offered in the preferred alternatives (i.e., flexible retention and size limits) would increase opportunities to achieve optimum yield.

NS2 requires that conservation and management measures be based on the best scientific information available. The preferred alternatives in this document are consistent with NS2. The preferred alternatives consider the relevant shark stock status information, and data used for the analysis in this document consist of several up-to-date data sources including logbooks, observer reports, fishery-independent surveys, MRIP results, LPS results, and electronic dealer reports from the last several years. Taken together, this information constitutes the best scientific information available and serves as the basis for the preferred alternatives.

NS3 requires that, to the extent practicable, an individual stock of fish be managed as a unit throughout its range and interrelated stocks of fish be managed as a unit or in close coordination. The preferred alternatives in this document are consistent with NS3. The preferred alternatives for Atlantic blacknose sharks (removal of the blacknose shark management boundary and establishing a flexible commercial retention limit for blacknose sharks in the Atlantic region)

apply to the entire range of the Atlantic blacknose shark stock. The preferred alternatives for recreational shark fisheries (revising minimum size limits and retention limits) are based upon life history information specific to each shark species and/or stock, if the shark species has more than one known stock in the western North Atlantic Ocean.

NS4 requires that conservation and management measures do not discriminate between residents of different states. Furthermore, if it becomes necessary to allocate or assign fishing privileges among various U.S. fishermen, such allocation should be fair and equitable to all fishermen; be reasonably calculated to promote conservation; and should be carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges. The preferred alternatives in this document are consistent with NS4. The preferred alternatives for Atlantic blacknose sharks include the removal of the blacknose shark management boundary and establishment of a flexible commercial retention limit for blacknose sharks in the Atlantic region. The removal of the blacknose shark management boundary would apply to all Directed and Incidental shark LAP holders in the Atlantic region and the flexible commercial retention limit would apply to all Directed shark LAP holders. The Atlantic region is where the blacknose shark management boundary currently exists and where commercial retention of blacknose sharks is allowed (retention of blacknose shark is prohibited in the Gulf of America), thus, this is where this action must be taken. The preferred alternatives for recreational shark fisheries (revising minimum size limits and retention limits) apply to all recreational HMS permit holders (those who hold HMS Angling or Charter/Headboat permits, and Atlantic Tunas General category and Swordfish General Commercial permits when participating in a registered HMS tournament) across the entire U.S. Atlantic Exclusive Economic Zone (EEZ), including the Gulf of America and Caribbean Sea. The preferred alternatives do not allocate or assign fishing privileges among various fishermen.

NS5 requires that conservation and management measures should, where practicable, consider efficiency in the utilization of fishery resources, with the exception that no such measure shall have economic allocation as its sole purpose. The preferred alternatives in this document are consistent with NS5. The preferred alternatives were analyzed for changes in the efficiency of utilization of the fishery resource. Because the goal of this proposed rule is to increase management flexibility to react to changes in the Atlantic shark fisheries and optimize the ability of the commercial and recreational shark fisheries to harvest available quota to the extent practicable, this action is expected to increase efficiency in the utilization of fishery resources. As demonstrated in the EA, none of the preferred alternatives focus solely on economic allocation, but are expected to have neutral to minor beneficial economic impacts.

NS6 states that conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches. The preferred alternatives in this document are consistent with NS6. The preferred alternatives for Atlantic blacknose sharks (removal of the blacknose shark management boundary and establishing a flexible commercial retention limit for blacknose sharks in the Atlantic region) are responsive to changes in the distribution of the Atlantic blacknose shark stock and increase management flexibility to modify the retention limit in response to current fishery dynamics. The preferred

alternatives for recreational shark fisheries (revising minimum size limits and retention limits) further increase management flexibility to adjust management measures based on shark harvest throughout the fishing year.

NS7 states that conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication. The preferred alternatives in this document are consistent with NS7. The preferred alternatives were chosen, in part, to minimize costs while maximizing flexibility in commercial and recreational shark fisheries. The economic impacts section of the EA provides detailed analyses of the costs associated with each alternative. The preferred alternatives were also structured to avoid unnecessary duplication by taking into account existing requirements on the relevant fisheries and existing measures in place for Atlantic sharks.

NS8 states that conservation and management measures shall, consistent with the conservation requirements of the Magnuson-Stevens Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to provide for the sustained participation of such communities, and to the extent practicable, minimize adverse economic impacts on such communities. The preferred alternatives in this document are consistent with NS8. The social and economic impacts of the preferred alternatives on fishing communities are expected to be neutral to minor beneficial (as described in Chapters 4, 6, and 7).

NS9 states that conservation and management measures shall, to the extent practicable, minimize bycatch, and to the extent that bycatch cannot be avoided, minimize the mortality of such bycatch. The preferred alternatives in this document are consistent with NS9. The preferred alternatives increase retention limits and lower minimum size limits for some shark species to, in part, optimize the ability of the commercial and recreational shark fisheries to harvest available quota to the extent practicable. This adjustment to retention and size limits could increase opportunities for bycatch of sharks and other species. However, HMS permit holders are required to release any prohibited species, or species that they do not or cannot retain, immediately, without removing it from the water, and in a manner that maximizes its chances of survival. Additionally, the preferred alternatives are not expected to cause significant changes in fishing effort, areas, or practices, and thus are not expected to lead to significant increases in potential bycatch or increased interactions with non-target, or incidentally caught species, including protected species.

NS10 states that conservation and management measures shall, to the extent practicable, promote the safety of human life at sea. The preferred alternatives in the document are consistent with NS10. No impact to safety of life at sea is anticipated to result from these preferred alternatives. The preferred alternatives would not result in fishermen having to travel greater distances, fish in bad weather, or otherwise fish in an unsafe manner. Fishing effort and practices are unlikely to change as a result of the preferred alternatives.

8.2 EXECUTIVE ORDER 12123: FEDERALISM

This action does not contain regulatory provisions with federalism implications sufficient to warrant preparation of a Federalism Assessment under E.O. 13132.

8.3 COASTAL ZONE MANAGEMENT ACT

The CZMA (1972; reauthorized in 1996) requires that federal actions be consistent, to the extent practicable, with the enforceable policies of all state coastal zone management programs. This action explores alternatives that would remove the blacknose shark management boundary in the Atlantic region, modify the commercial retention limit for blacknose sharks in the Atlantic region, revise the recreational minimum size limits for Atlantic shark species, and revise the recreational retention limits for Atlantic shark species. The goal of this proposed rule is to increase management flexibility to react to changes in the Atlantic shark fisheries and optimize the ability of the commercial and recreational shark fisheries to harvest available quota to the extent practicable. This effort would be responsive to the new framework for implementing management measures established in Amendment 14, findings from the SHARE document, public comments from scoping for Amendment 16, and recent domestic laws and international agreements that are having direct and indirect effects on the commercial fishery. NMFS finds the alternatives analyzed in this action to be consistent to the maximum extent practicable with the enforceable policies of states that have approved coastal zone management programs. NMFS is seeking concurrence with respect to the preferred alternatives and will ask for states' agreement with this determination during the proposed rule stage.

8.4 ESSENTIAL FISH HABITAT

Pursuant to 16 U.S.C. § 1855(b)(1), and as implemented at 50 CFR § 600.815, the Magnuson-Stevens Act requires NMFS to identify and describe EFH for each life stage of managed species and to evaluate the potential adverse effects of fishing activities on EFH, including the cumulative effects of multiple fisheries activities. If NMFS determines that fishing gears are having an adverse effect on HMS EFH, or other species' EFH, then NMFS must include management measures that minimize adverse effects to the extent practicable.

In the HMS FMP and Amendment 1, NMFS reviewed the various HMS gear types with the potential to affect EFH. Based on the best information available at that time, NMFS determined that there was no evidence that physical effects caused by any authorized HMS gears were affecting EFH for targeted or non-targeted species, to the extent that physical effects can be identified on the habitat or the fisheries. In 2015, NMFS completed an HMS EFH 5-year review to investigate additional effects of HMS fishing gears on HMS EFH since Amendment 1. NMFS did not find any significant changes in effects to HMS EFH from HMS and non-HMS fishing gear types and no new information that any authorized HMS gear would have adverse effects on EFH. Based on findings from the 2015 HMS EFH 5-year review, updates were made to HMS EFH in Amendment 10. NMFS conducted a literature review as part of Draft Amendment 10 (81 FR 62100, September 8, 2016). Final Amendment 10 was published on September 7, 2017 (82 FR 42329). The preferred alternatives in this action are not expected to change the fishing gear types authorized relative to the status quo. Therefore, the preferred alternatives in the context of the fishery as a whole would not have an adverse effect on EFH and an EFH consultation is not required.

NMFS recently completed an HMS EFH 5-year review to gather all new information and determine whether modifications to existing EFH descriptions and designations are warranted. The Final HMS EFH 5-Year Review published on April 18, 2024 (89 FR 27716). Based on the Final HMS EFH 5-Year Review, NMFS determined that EFH modifications are warranted, which will be completed through Amendment 17 to the HMS FMP.

8.5 PROTECTED RESOURCES

The preferred alternatives considered in this action (A2, B2, C4, and D2) are likely to have neutral effects on protected resources, including sea turtles, sharks listed under the ESA, or marine mammals protected by the MMPA. The purpose of the preferred alternatives are to increase management flexibility to react to changes in the Atlantic shark fisheries and optimize the ability of the commercial and recreational shark fisheries to harvest available quota to the extent practicable. Gears authorized for use in the commercial and recreational shark fisheries include bottom longline, pelagic longline, rod and reel, handline, bandit gear, and gillnet. Although the preferred alternatives considered in this action would increase opportunities to land sharks, we do not expect an increase in effort or gear modifications that would increase interactions with protected resources such as sea turtles, sharks listed under the ESA or marine mammals protected by the MMPA. If an individual of one of these species were to be captured or hooked, it would be quickly removed and released since each of these gears is actively tended. Because these gears would continue to be actively tended, each of the alternatives would have neutral direct and indirect impacts in the short and long term on protected resources.

No modifications with respect to authorized fishing gear would be made under the other alternatives considered for Atlantic blacknose sharks in the commercial fishery (A1, B1, and B3) or Atlantic sharks in the recreational fishery (C1, C2, C3, C5, D1, and D3), and therefore no changes in impacts to protected resources from the status quo would be expected.

The No Action alternatives considered for Atlantic blacknose sharks in the commercial fishery (A1 and B1) and Atlantic sharks in the recreational fishery (C1 and D1) would not implement any new management measures. As a result, no reduction of fishing pressure or related mortality for these species, and no reduction of pressure on other protected resources would be expected from the status quo.

Under the other alternatives considered for Atlantic blacknose sharks in the commercial fishery and Atlantic sharks in the recreational fishery, incidentally caught individuals would be quickly removed and released since each of the authorized gears is actively tended. Because these gears would continue to be actively tended, the non-preferred alternatives would be expected to have neutral direct and indirect impacts in the short- and long-term on protected resources.

9 List of Agencies and Persons Consulted

The development of this rulemaking involved input from many people including NMFS staff, NMFS contractors, the public, constituent groups, and the HMS Advisory Panel. Staff and contractors from the HMS Management Division, in alphabetical order, who worked on this document include:

- Heather Baertlein, Data Management Specialist
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- Karyl Brewster-Geisz, Branch Chief
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- Tobey Curtis, Fishery Management Specialist
- Daniel Daye, Spatial Modeler and Statistician
- Guy DuBeck, Fishery Management Specialist
- Cliff Hutt, Fishery Management Specialist
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- Sarah McLaughlin, Management and Program Analyst
- Anna Quintrell, Fishery Management Specialist
- George Silva, Economist
- Ann Williamson, Fishery Management Specialist
- Jackie Wilson, Fishery Management Specialist

The development of this document also involved considerable input from other staff members and Offices throughout NOAA including, but not limited to the Office of the General Counsel, Southeast Fisheries Science Center, and Northeast Fisheries Science Center.

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