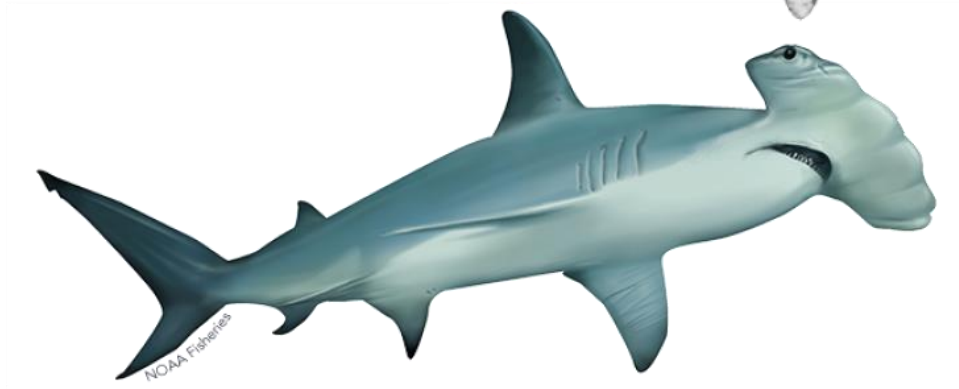


*Draft Environmental Assessment,
Regulatory Impact Review, and
Initial Regulatory Flexibility Analysis
for the*

**Rule to Prohibit the Commercial and Recreational Retention of
Oceanic Whitetip Sharks in U.S. Atlantic Waters and Hammerhead
Sharks in the U.S. Caribbean Sea**



Atlantic Highly Migratory Species Management Division
Office of Sustainable Fisheries
National Marine Fisheries Service

March 2023

Action: Implementation of the 2020 Biological Opinions' Conservation Recommendations to Prohibit the Retention of Oceanic Whitetip Sharks and Scalloped Hammerhead 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

For Further Information: Atlantic Highly Migratory Species Management Division (F/SF1)
1315 East-West Highway
Silver Spring, Maryland 20910
Phone: 301-427-8503

Abstract: On May 15, 2020, NOAA Fisheries issued two Biological Opinions (BiOps) for Atlantic highly migratory species (HMS): one for the pelagic longline (PLL) fishery and one for the non-PLL fisheries. As a result of the Endangered Species Act (ESA) listing for oceanic whitetip sharks and the Central and Southwest Atlantic Distinct Population Segment (DPS) of scalloped hammerhead sharks, the BiOps strongly encouraged the inclusion of these federally protected species on the HMS list of prohibited shark species for recreational and/or commercial HMS fisheries. Under existing regulations, retention and possession of oceanic whitetip sharks and all hammerhead sharks are prohibited for commercial fishermen using PLL gear and recreational fishermen who have tunas, swordfish, and/or billfish on board. For oceanic whitetip sharks, this action would extend the prohibitions to all HMS permitted fishermen by adding oceanic whitetip sharks to the prohibited sharks species group using the criteria in 50 CFR 635.34(c). Although only the scalloped hammerhead shark Central and Southwest Atlantic DPS is listed under the ESA, this action considers prohibiting retention of great, smooth, and scalloped hammerhead sharks for all HMS permitted fishermen in the U.S. Caribbean region due to the likelihood of misidentification by fishermen. This action is being taken pursuant to the rulemaking authority under the Magnuson-Stevens Fishery Conservation and Management Act, section 305(d).

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1.0 INTRODUCTION

1.1 Regulatory Authorities

The National Marine Fisheries Service (NOAA Fisheries), on behalf of the Secretary of Commerce, is responsible for managing HMS¹, including the federal Atlantic shark, tuna, billfish, and swordfish fisheries, under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act; 16 U.S.C. 1801 et seq.) and the Atlantic Tunas Convention Act (ATCA; 16 U.S.C. 971 et seq.). Under the Magnuson-Stevens Act, NOAA Fisheries must, consistent with 10 National Standards, manage fisheries to maintain optimum yield on a continuing basis, while preventing overfishing. Since 1993, NOAA Fisheries has implemented several fishery management plans (FMPs), FMP amendments, and numerous regulations relating to HMS fisheries under the authority of the Magnuson-Stevens Act. Currently, HMS fisheries are managed under the 2006 Consolidated Atlantic Highly Migratory Species Fishery Management Plan (2006 Consolidated HMS FMP), its amendments, and implementing regulations at 50 CFR part 635.

In accordance with both the Magnuson-Stevens Act and ATCA, the alternatives in this Environmental Assessment (EA) and associated proposed rule analyze the potential environmental, economic, and social impacts of options that would add oceanic whitetip sharks (*Carcharhinus longimanus*) to the prohibited shark species group (Table 1 of Appendix A to 50 CFR Part 635) using the regulatory criteria codified at § 635.34(c)(1)-(4) and prohibit the retention of hammerhead sharks in the large coastal shark (LCS) complex (i.e., great, smooth, and scalloped hammerhead sharks) by HMS permitted fishermen in the U.S. Caribbean region. 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 NOAA Fisheries' responsibilities under NEPA, as implemented by the regulations published by the Council on Environmental Quality (CEQ), 50 CFR parts 1501-1508², and NOAA Administrative Order 216-6A (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.

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 This EA is being prepared using the 2020 CEQ NEPA Regulations. The effective date of the 2020 CEQ NEPA Regulations was September 14, 2020 and reviews begun after these dates are required to apply the 2020 regulations unless there is a clear and fundamental conflict with an applicable statute (85 FR 43372) (§§ 1506.13, 1507.3(a)). This EA began on April 28, 2021 and accordingly proceeds under the 2020 regulations.

1.2 Brief Management History

This section provides a brief overview of Atlantic shark management relative to the proposed action. More detail regarding the history of Atlantic shark management can be found in Chapter 3 of this document.

NOAA Fisheries 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 bag limits. NOAA Fisheries 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), later amended in 2003 (Amendment 1: 68 FR 74746, December 24, 2003). In 2006, NOAA Fisheries consolidated the Atlantic Tunas, Swordfish, and Shark FMP and its amendments with the Atlantic Billfish FMP and its amendments into the 2006 Consolidated HMS FMP. Since then, 14 amendments to the 2006 Consolidated HMS FMP have been made or proposed.

Amendment 1 to the 1999 FMP established regulatory criteria, codified at § 635.34(c), for adding or removing a shark from the prohibited shark species group. Relevant to this proposed action, § 635.34(c) provides that NOAA Fisheries may add species to the prohibited shark species group if the species is determined to meet at least two of the following four criteria:

- 1) Biological information indicates that the stock warrants protection;
- 2) Information indicates that the species is rarely encountered or observed caught in HMS fisheries;
- 3) Information indicates that the species is not commonly encountered or observed caught as bycatch in fishing operations for species other than HMS; and,
- 4) The species is difficult to distinguish from other prohibited species.

In 2008, the International Commission for the Conservation of Atlantic Tunas (ICCAT) Standing Committee on Research and Statistics (SCRS) performed an ecological risk assessment for pelagic sharks caught in Atlantic PLL fisheries. In the results of this assessment, the risk of overexploitation for oceanic whitetip sharks was categorized either as moderately high or high, based on a number of factors, including productivity (biological ability to sustain fishing or recover from overfishing) and susceptibility (likelihood of a species to be affected by fishing). Smooth (*Sphyrna zygaena*) and scalloped (*Sphyrna lewini*) hammerhead sharks were shown to have lower levels of risk, with variable productivity but low susceptibility to PLL fisheries in the Atlantic Ocean, and less variation in susceptibility across fleets.

In 2010, ICCAT adopted Recommendation 10-07, which prohibits retaining onboard, transshipping, landing, storing, selling, or offering for sale any part or whole carcass of oceanic whitetip sharks in any fishery. ICCAT also adopted Recommendation 10-08, which noted that scalloped and smooth hammerhead sharks were among the shark species for which there were sustainability concerns. This recommendation considered the difficulty of differentiating between the various species of hammerhead sharks, except for bonnethead sharks (*Sphyrna*

tiburo), without taking them on board and that such action might jeopardize the survival of the captured individuals. Recommendation 10-08 prohibited retaining on board, transshipping, landing, storing, selling, or offering for sale any part or whole carcass of hammerhead sharks of the family Sphyrnidae (except for bonnethead sharks) taken in the Convention area in association with ICCAT fisheries.

In 2011, NOAA Fisheries determined scalloped hammerhead sharks to be overfished and experiencing overfishing (76 FR 23794, April 28, 2011). This determination was based on a stock assessment of scalloped hammerhead sharks in U.S. waters, published in the North American Journal of Fisheries Management (Hayes et al., 2009).

Additionally in 2011, to implement the relevant recommendations of ICCAT, NOAA Fisheries published a final rule (76 FR 53652, August 29, 2011) that implemented ICCAT Recommendations 10-07 and 10-08. That final rule prohibited the retention, transshipping, landing, storing, or selling of oceanic whitetip sharks and hammerhead sharks in the family Sphyrnidae (except for bonnethead sharks) caught in association with fisheries managed by ICCAT. The rule, effective in September 2011, prohibited the retention of oceanic whitetip sharks and hammerhead sharks by: HMS commercially-permitted vessels that had PLL gear on board; and recreational fishermen where tunas, swordfish, and/or billfish were also retained. Specifically, in that rule, recreational fishermen included fishermen fishing: with a General category permit when participating in an HMS tournament; or under an HMS Angling or Charter/Headboat permit, where tunas, swordfish, and /or billfish are also retained. Under current regulations, recreational fishermen would also include fishermen fishing with a Swordfish General Commercial permit when participating in an HMS tournament. Commercial shark bottom longline (BLL), gillnet, or handgear fisheries and shark recreational fisheries when tunas, swordfish, and/or billfish were not retained were not impacted by the 2011 rule because they were not considered ICCAT fisheries (i.e., fisheries that target tunas, swordfish, and/or billfish), and thus could continue to retain oceanic whitetip and hammerhead sharks.

In 2013, NOAA Fisheries published Amendment 5a to the 2006 Consolidated HMS FMP (78 FR 40317, July 3, 2013). In Amendment 5a, NOAA Fisheries, among other things, established a rebuilding plan for scalloped hammerhead sharks. As part of that rebuilding plan, NOAA Fisheries: established a hammerhead shark management group, which consisted of scalloped, smooth, and great (*Sphyrna mokarran*) hammerhead sharks (within the LCS complex); established a commercial quota for that management group; linked the opening and closings of that management group to the aggregated LCS management group; and increased the minimum recreational size limit from 54 inches fork length to 78 inches fork length for all hammerhead shark species.

In 2014, NOAA Fisheries published a final rule (79 FR 38213, July 3, 2014), in response to a petition from Wildlife Guardians and Friends of Animals, which issued a final determination listing the Central and Southwest Atlantic DPS and the Indo-West Pacific DPS of scalloped hammerhead sharks as threatened under the ESA. The Central and Southwest Atlantic DPS was defined as the area bounded to the north by 28° N. lat., to the east by 30° W. long., and to the south by 36° S. lat. (Figure 1.1). All waters of the Caribbean Sea are within this DPS boundary,

including the Bahamas' Exclusive Economic Zone (EEZ) off the coast of Florida, the U.S. EEZ off Puerto Rico and the U.S. Virgin Islands, and Cuba's EEZ.



Figure 1.1 Boundaries of the Central and Southwest Atlantic DPS of Scalloped Hammerhead Sharks

On January 30, 2018, NOAA Fisheries published a final rule, in response to a petition from Defenders of Wildlife, which determined that oceanic whitetip sharks warrant listing as a threatened species under the ESA throughout its range (83 FR 4153).

In 2020, NOAA Fisheries issued two BiOps under section 7(a)(2) of the ESA. These BiOps concluded consultation on the Atlantic HMS PLL and non-PLL fisheries, as managed under the 2006 Consolidated HMS FMP and its amendments.³ Conservation recommendation item 5 in the PLL fishery BiOp and item 15 in the non-PLL fisheries BiOp strongly encouraged the inclusion of oceanic whitetip sharks and the Central and Southwest Atlantic DPS of scalloped hammerhead sharks (federally protected species) on the HMS list of prohibited shark species for recreational and/or commercial HMS fisheries. While retention and possession of oceanic

³ In July 2022, NOAA Fisheries requested reinitiation of consultation on the effects of the Atlantic HMS PLL fishery due to new information on mortality of giant manta ray that exceeded estimates from the 2020 BiOp. Pending completion of this consultation, the fishery continues to operate consistent with the Reasonable and Prudent Measures and Terms and Conditions specified in the May 2020 BiOp, and NOAA Fisheries continues to monitor take of giant manta rays in the fishery.

whitetip and scalloped hammerhead sharks are already prohibited in the PLL fishery, consistent with regulations implementing various ICCAT recommendations, this prohibition does not extend to all HMS fisheries. Therefore, further protections are warranted.

In recent years, scientists have discovered a cryptic species of hammerhead shark, the Carolina hammerhead (*Sphryna gilberti*). While the species is not currently included in the management unit, the Carolina hammerhead shark looks nearly identical to the scalloped hammerhead shark and is found in the same waters off the Atlantic coast. As such, NOAA Fisheries acknowledges that landings of Carolina hammerhead sharks are likely reported as scalloped hammerhead sharks, and any management measures that affect scalloped hammerhead sharks, such as the ones considered in this document, likely affect Carolina hammerhead sharks as well. NOAA Fisheries has included the species in the ongoing stock assessment for LCS hammerhead sharks (see <https://sedarweb.org/assessments/sedar-77/>). Once that assessment is complete, NOAA Fisheries may consider adding the Carolina hammerhead shark to the management unit and determine any management measures, as appropriate. Because the species is not currently in the management unit and any data regarding the species is being reviewed during the stock assessment process, this document does not further consider this species.

1.3 Proposed Action, Purpose, and Need

Proposed Action: NOAA Fisheries is considering adding oceanic whitetip sharks to the prohibited shark species group, removing oceanic whitetip sharks from the list of pelagic indicator species, and prohibiting possession and retention of great, smooth, and scalloped hammerhead sharks in the U.S. Caribbean region.

Purpose: The purpose of this proposed action is to reduce the mortality of oceanic whitetip sharks and the Central and Southwest Atlantic DPS of scalloped hammerhead sharks, which are both listed as threatened under the ESA. This effort would promote the conservation and recovery of these threatened species.

Need: This proposed action would be responsive to two 2020 BiOps under section 7(a)(2) of the ESA. These BiOps addressed the Atlantic HMS PLL and non-PLL fisheries, as managed under the 2006 Consolidated HMS FMP and its amendments. For oceanic whitetip sharks and the Central and Southwest Atlantic DPS of scalloped hammerhead sharks, the BiOps strongly encouraged the inclusion of these federally protected species on the HMS list of prohibited shark species for HMS recreational and/or commercial HMS fisheries.

1.4 Scope and Organization of this Document

In considering the management measures outlined in this document, NOAA Fisheries must comply with a number of federal statutes, 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, NOAA Fisheries adhered to the procedural requirements of NEPA, the CEQ regulations for implementing NEPA (40 CFR parts 1500-1508), 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*: CEQ regulations implementing NEPA define effects or impacts as the “changes to the human environment from the proposed action or alternatives that are reasonably foreseeable and have a reasonably close causal relationship to the proposed action or alternatives, including those effects that occur at the same time and place as the proposed action or alternatives and may include effects that are later in time or farther removed in distance from the proposed action or alternatives” (40 CFR 1508.1(g)).
- *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.
- *Adverse or beneficial impacts*. 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 adding oceanic whitetip sharks to the prohibited shark species group using the criteria in

§ 635.34(c) and prohibiting the commercial and recreational retention of LCS hammerhead sharks (great, smooth, and scalloped hammerhead sharks) in the U.S. Caribbean region. 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), and any cumulative impacts from this action (Section 4.6).

Additional federal requirements include the Magnuson-Stevens Act, Executive Order 12866 (E.O. 12866, Regulatory Planning and Review), and the Regulatory Flexibility Act (RFA). This document comprehensively analyzes the alternatives considered for all these requirements.

Chapter 4 provides a summary of all the economic analyses and associated data. Chapter 6 addresses the requirements under E.O. 12866, and Chapter 7 provides the Initial Regulatory Flexibility Analysis (IRFA) required under the RFA. Chapters 8 through 11 provide additional information that is required under various statutes. While some of the chapters were written to comply with the specific requirements under these various statutes and requirements, it is the document as a whole that meets these requirements and not any individual chapter.

2.0 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 NOAA Fisheries 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 reasonable⁴ and meet the purpose and need of the action (see Section 1.3). Screening criteria are used to determine whether an alternative is reasonable. The following discussion identifies the screening criteria used in this EA to evaluate whether an alternative is reasonable; evaluates various alternatives against the screening criteria (including the proposed measures) and identifies those alternatives found to be reasonable; identifies those alternatives found not to be reasonable; and for the latter, provides the basis for this finding. Alternatives considered but found not to be reasonable are not evaluated in detail in this EA.

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, etc.).
- An alternative must be consistent with the 2006 Consolidated HMS FMP and its amendments.

This chapter includes a full range of reasonable alternatives designed to meet the purpose and need for 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 Oceanic Whitetip Retention Limit Management

NOAA Fisheries is considering two alternatives specific to oceanic whitetip sharks as described below.

Alternative A1: Keep the Current Regulations for Oceanic Whitetip Sharks – No Action

Under Alternative A1, the No Action alternative, NOAA Fisheries would maintain the status quo. Under this alternative, vessels with PLL gear onboard would continue to be prohibited from

⁴ “Section 1502.14 (of the CEQ Regulations) requires the EA to examine all reasonable alternatives to 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. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant.” (46 FR 18026, March 23, 1981).

retaining oceanic whitetip sharks. HMS Commercial Caribbean Small Boat permit holders would continue to be prohibited from retaining oceanic whitetip sharks. Commercial permit holders issued a Directed or Incidental shark limited access permit (LAP) using non-PLL gear (e.g., BLL, gillnet, rod and reel, handline, and bandit gear) would still be authorized to retain, possess, land, sell, or purchase oceanic whitetip sharks subject to existing commercial regulations. Retention of oceanic whitetip sharks by recreational HMS permit holders (those who hold HMS Angling or Charter/Headboat permits, or those who hold Atlantic Tunas General category and Swordfish General Commercial permits when participating in a registered HMS tournament) where tunas, swordfish, and/or billfish are also retained or possessed would continue to be prohibited. However, those recreational HMS permit holders that also have a shark endorsement would still be authorized to fish for, retain, and land oceanic whitetip sharks when not retaining tunas, swordfish, and/or billfish.

Alternative A2: Prohibit the Commercial and Recreational Retention of All Oceanic Whitetip Sharks - *Preferred Alternative*

Under Alternative A2, the preferred alternative, NOAA Fisheries would add oceanic whitetip sharks to the prohibited shark species group (Table 1 of Appendix A to 50 CFR Part 635) using the criteria in § 635.34(c). Once added to the prohibited shark species group, the retention, possession, landing, sale, or purchase of oceanic whitetip sharks or parts of oceanic whitetip sharks would be prohibited in all commercial and recreational HMS fisheries (i.e., U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea). As part of this alternative, NOAA Fisheries would also remove oceanic whitetip sharks from the list of pelagic indicator species (Table 2 to Appendix A to Part 635) because sharks in the prohibited shark species group cannot be possessed or landed and therefore their presence onboard should not be considered an indicator of a pelagic longline vessel.

2.2 Alternatives for Hammerhead Shark Retention Limit Management

NOAA Fisheries is considering five alternatives specific to hammerhead sharks in the LCS complex (i.e., great, smooth, and scalloped hammerhead sharks) as described below. The alternatives do not address bonnethead sharks, which are part of the small coastal sharks complex.

Alternative B1: Keep the Current Regulations for LCS Hammerhead Sharks – No Action

Under Alternative B1, the No Action alternative, NOAA Fisheries would maintain the status quo for great, smooth, and scalloped hammerhead sharks. Under this alternative, retention of these hammerhead sharks on vessels with PLL gear onboard would continue to be prohibited. Commercial permit holders issued a Directed or Incidental shark limited access permit (LAP) using non-PLL gear (e.g., BLL, gillnet, rod and reel, handline, and bandit gear) would still be authorized to retain, possess, land, sell, or purchase these hammerhead sharks subject to existing commercial regulations. Retention of these hammerhead sharks by HMS recreational permit holders (those who hold HMS Angling or Charter/Headboat permits, or those who hold Atlantic Tunas General category and Swordfish General Commercial permits when participating in a registered HMS tournament) where tunas, swordfish, and/or billfish are also retained or possessed would continue to be prohibited. However, those recreational HMS permit holders,

provided they also have a shark endorsement, would still be authorized to fish for, retain, and land these hammerhead sharks when not retaining tunas, swordfish, and/or billfish. The HMS Commercial Caribbean Small Boat permit holders would continue to be prohibited from retaining LCS hammerhead sharks.

Alternative B2: Prohibit the Commercial and Recreational Retention of Scalloped Hammerhead Sharks in the U.S. Caribbean Region

Under Alternative B2, NOAA Fisheries would prohibit the possession and retention of scalloped hammerhead sharks in all HMS commercial and recreational fisheries within the U.S. Caribbean region. Under this alternative, scalloped hammerhead sharks could not be retained, possessed, landed, sold, or purchased within the U.S. Caribbean region, which is defined as the Caribbean Sea and Atlantic Ocean seaward of Puerto Rico, the U.S. Virgin Islands, and possessions of the United States in the Caribbean Sea (see § 622.2) and is shown in Figure 1.2.

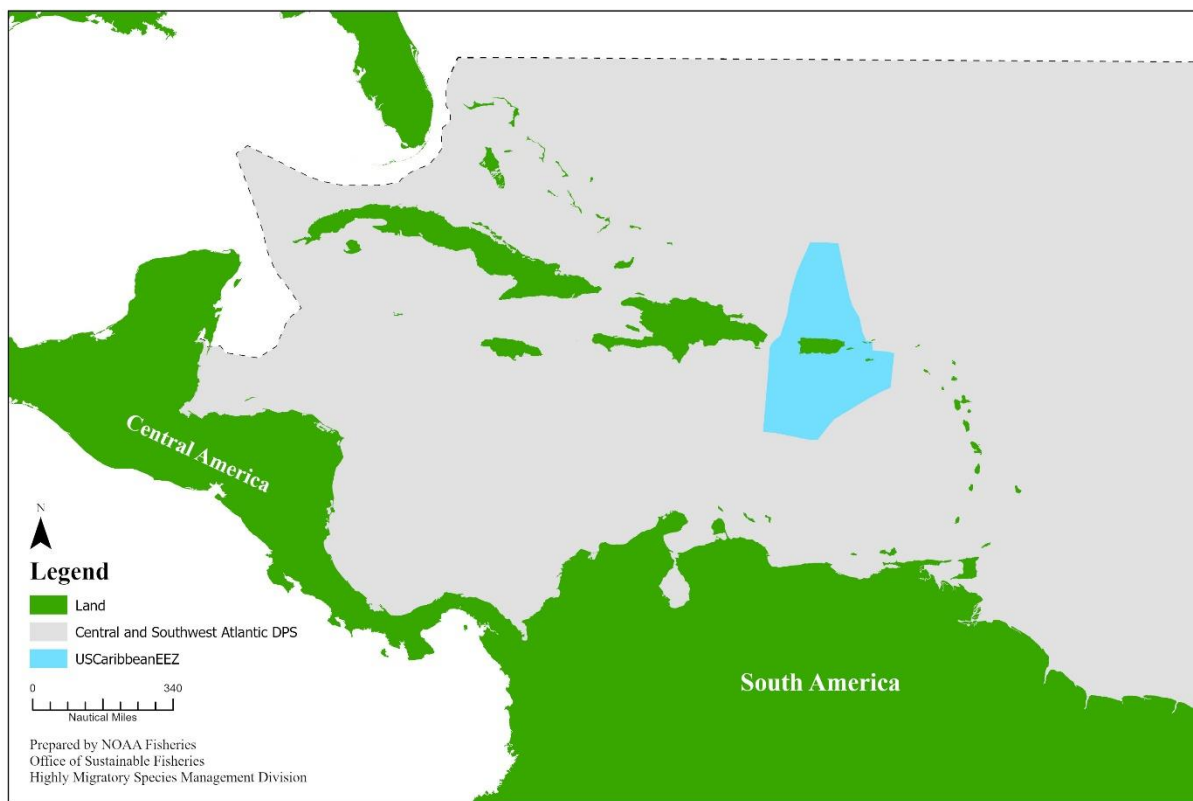


Figure 2.2 Location of the U.S. Caribbean Region

Alternative B3: Prohibit the Commercial and Recreational Retention of Scalloped Hammerhead Sharks in All Regions

Under Alternative B3, NOAA Fisheries would prohibit the possession and retention of scalloped hammerhead sharks in all HMS commercial and recreational fisheries in U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea.

NOAA Fisheries considered adding scalloped hammerhead sharks to the prohibited shark species group using the criteria at § 635.34(c), but ultimately elected not to include it as an alternative. This species meets two of the four criteria (see page 6), which would warrant addition to the group. Regarding the first and fourth criteria, the scalloped hammerhead shark Central and Southwest Atlantic DPS is listed as a threatened species under the ESA, and distinguishing hammerhead sharks from each other is quite difficult even for the most seasoned fishermen. However, NOAA Fisheries prefers not to add scalloped hammerhead sharks to the prohibited shark species group since only two scalloped hammerhead DPSs are designated as “threatened” under the ESA (one of which occurs in U.S. waters) and would unnecessarily limit retention of hammerhead sharks that are still authorized for commercial and recreational HMS fisheries in U.S. waters of the Atlantic Ocean and Gulf of Mexico. Additionally, the second and third criteria are not met by scalloped hammerhead sharks. This species is encountered and observed caught in HMS fisheries. From 2017 through 2021, there was an average of 16,170 pounds dressed weight (lb dw) of scalloped hammerhead sharks landed in the commercial sector in U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea. Moreover, this species is also encountered and observed as bycatch in fishing operations for species other than HMS, for example, in the Atlantic and Gulf of Mexico gillnet fishery.

Alternative B4: Prohibit the Commercial and Recreational Retention of All LCS Hammerhead Sharks in the U.S. Caribbean Region - *Preferred Alternative*

Under Alternative B4, NOAA Fisheries would prohibit the possession and retention of LCS hammerhead sharks (i.e., great, smooth, and scalloped hammerhead sharks) in all HMS fisheries in the U.S. Caribbean region (see Figure 1.2).

Alternative B5: Prohibit the Commercial and Recreational Retention of All LCS Hammerhead Sharks in All Regions

Under Alternative B5, NOAA Fisheries would prohibit the possession and retention of LCS hammerhead sharks (i.e., great, smooth, and scalloped hammerhead sharks) in all HMS fisheries in U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea.

3.0 AFFECTED ENVIRONMENT

This chapter describes the affected environment (i.e., the fishery, the gears used, the communities involved, etc.), 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 oceanic whitetip and hammerhead shark stocks; 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 Summary of Atlantic Highly Migratory Species Shark Management

The authority to manage Atlantic HMS fisheries was delegated to NOAA Fisheries by the Secretary of Commerce. The Atlantic HMS Management Division develops regulations for HMS fisheries within the Office of Sustainable Fisheries of NOAA Fisheries. HMS fisheries require management at the international, national, and state levels because of the highly migratory nature of the species involved. For sharks, generally NOAA Fisheries 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 to this generalization. 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' range. NOAA Fisheries participated in the development of this interstate shark FMP.

States are invited to send representatives to HMS Advisory Panel meetings and to participate in stock assessments, public hearings, or other fora. NOAA Fisheries continues to work on improving its communication and coordination with state agencies and welcomes comments from states about various shark measures. NOAA Fisheries will share this document with the Atlantic, Gulf of Mexico, and Caribbean states and territories and 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, NOAA Fisheries participates in the stock assessments conducted by SCRS and in ICCAT meetings. NOAA Fisheries implements 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.

NOAA Fisheries also actively participates in other international bodies on shark-related conservation and management efforts, including the Convention on International Trade in

Endangered Species (CITES) and the Food and Agriculture Organization (FAO). Several shark species, including white, basking, oceanic whitetip, porbeagle, silky, and hammerhead sharks, have been listed under Appendix II of CITES. In late 2022, CITES agreed to list additional shark species, including bonnethead sharks (*S. tiburo*), under Appendix II. Those listings will be effective in 2023. Under Appendix II, international trade 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.

3.1.1 Summary of Domestic Shark Management

This section provides a brief history of fisheries management for Atlantic sharks. For more information on the complete HMS management history as it relates to sharks, please refer to the 2006 Consolidated HMS FMP (NMFS 2006) and Amendments 2, 3, 5a, 5b, 6, 9, and 11 to the 2006 Consolidated HMS FMP. Relevant proposed rules, final rules, and other official notices can also be found in the *Federal Register* at <https://www.federalregister.gov/>. Supporting documents, including the original FMPs, can be found on the HMS Management Division's webpage at <https://www.fisheries.noaa.gov/topic/atlantic-highly-migratory-species>. Documents can also be requested by calling the HMS Management Division at (301) 427-8503.

Forty-two shark species are managed by NOAA Fisheries' HMS Management Division based upon conservation and management needs. Based on fishery dynamics, these sharks are divided into five species groups or complexes for purposes of management: (1) LCS, (2) small coastal sharks, (3) pelagic sharks, (4) prohibited species, and (5) smoothhound sharks (Table 3.1). Oceanic whitetip sharks are included in the pelagic shark complex. Great, smooth, and scalloped hammerhead sharks are included in the LCS complex.

Table 3.1 Common Names of Shark Species Included Within the Five Species Complexes

Species Complex	Shark Species Included
Large Coastal Sharks (11)	Sandbar ⁺ , silky ⁺ , tiger, blacktip ⁺ , bull ⁺ , spinner ⁺ , lemon ⁺ , nurse, smooth hammerhead ⁺ , scalloped hammerhead ⁺ , and great hammerhead ⁺ sharks
Small Coastal Sharks (4)	Atlantic sharpnose ⁺ , blacknose ⁺ , finetooth, and bonnethead ⁺ sharks
Pelagic Sharks (5)	Shortfin mako ⁺ , thresher, oceanic whitetip ^{***} , porbeagle ⁺ , and blue ⁺ sharks
Prohibited Species (19)	Whale ⁺ , basking ⁺ , sand tiger, bigeye sand tiger, white ⁺ , dusky ⁺ , night ⁺ , bignose, Galapagos ⁺ , Caribbean reef ⁺ , narrowtooth, longfin mako ⁺ , bigeye thresher, sevengill, sixgill, bigeye sixgill, Caribbean sharpnose ⁺ , smalltail ⁺ , and Atlantic angel sharks
Smoothhound Sharks (3)	Smooth dogfish, Florida smoothhound, and Gulf smoothhound sharks

Note: Retention of certain sharks varies depending on permits, 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 PLL gear and recreationally if swordfish, tunas, and/or billfish are also retained.

^ Listed under CITES Appendix II.

° DPS in the central and southwest Atlantic Ocean listed as threatened under the ESA.

** Listed as threatened throughout its range under the ESA.

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 Atlantic, Gulf of Mexico, and Caribbean states and territories, as of December 31, 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 Summary of International Shark Management

ICCAT recommendations are binding instruments for Contracting Parties, while ICCAT resolutions are non-binding and express the will of the Commission. All ICCAT recommendations and resolutions are available on the ICCAT website at <http://www.iccat.int>. Under ATCA, NOAA Fisheries is required to promulgate regulations as necessary and appropriate to implement binding ICCAT measures. ICCAT generally 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 Summary of Atlantic Shark Stock Status

The domestic stock status determination criteria, thresholds used to determine the stock status, and information on the stock status for HMS shark species are presented in Chapter 2 of the HMS SAFE Report. Atlantic shark stock assessments for LCS and small coastal sharks are generally completed by the SouthEast Data, Assessment, and Review (SEDAR) process. All SEDAR reports are available online at <http://sedarweb.org/sedar-projects>. ICCAT's SCRS has assessed blue, shortfin mako, and porbeagle sharks. All SCRS final stock assessment reports can be found on the ICCAT website at <https://www.iccat.int/en/assess.html>.

In some cases, NOAA Fisheries also looks at available resources, including peer-reviewed literature, for external assessments that, if deemed appropriate, could be used for domestic management purposes. NOAA Fisheries followed this process in determining the stock status of scalloped hammerhead sharks based on an assessment for scalloped hammerhead sharks in U.S. waters completed by Hayes et al. (2009). The stock assessment utilized a surplus production model, an approach commonly used in data poor scenarios, and incorporated commercial and recreational landings, fisheries dependent data, fisheries independent data from NOAA Fisheries observer programs, and scientific surveys. NOAA Fisheries reviewed the paper and, at that time, determined that the assessment was an improvement over the previous assessment and appropriate for U.S. management decisions (76 FR 23794, April 28, 2011). Based on the results of the paper, NOAA Fisheries determined that scalloped hammerhead sharks were overfished and experiencing overfishing. Further, while a stock assessment for the Central and Southwest Atlantic DPS of scalloped hammerhead sharks is lacking, it was estimated by Miller et al. (2014)

that abundance numbers are likely similar to or worse than the results of the Hayes et al. (2009) assessment of the Northwestern Atlantic and Gulf of Mexico DPS (i.e., depleted by approximately 83 percent since 1981).

The Hayes et al. (2009) stock assessment estimated that a total allowable catch (TAC) of 2,853 scalloped hammerhead sharks (approximately 79.6 mt) would allow for a greater than 70 percent probability to rebuild the stock within 10 years. As a result, NOAA Fisheries established an annual catch limit and TAC that would allow rebuilding of the stock within 10 years. The rebuilding plan is set for 2013 through 2023. NOAA Fisheries is currently conducting a stock assessment on all LCS hammerhead sharks (SEDAR 77). This assessment is expected to be completed in 2024.

Oceanic whitetip sharks have not been assessed and there is no upcoming stock assessment planned for the species.

3.1.5 Biology and Life History of Oceanic Whitetip Sharks and Hammerhead Sharks

As described in more detail in Chapter 3 of Amendment 6 to the 2006 Consolidated HMS FMP (80 FR 50073, August 18, 2015), sharks have a low reproductive potential compared to many other fish, increasing their vulnerability to overfishing. Various life history parameters for oceanic whitetip and LCS hammerhead sharks are shown in Table 3.2.

Table 3.2 Life History Parameters for Oceanic Whitetip Sharks and LCS Hammerhead Sharks

Parameter	Oceanic Whitetip Shark ¹	Great Hammerhead Shark ²	Smooth Hammerhead Shark ²	Scalloped Hammerhead Shark ²
Age at Maturity (Years)	6 – 7	7.8 (male) 8.1 (female)	10.4 (male) 10.5 (female)	11.31 (male) 16.11 (female)
Gestation Period (Months)	10 – 12	11 – 12	10-11	10 - 12
Reproductive Periodicity	Biennial	Biennial	Biennial	Annual
Litter Size	5 - 6	13 – 56	Average 33.5	7 – 30

¹ Life history parameters are based on two studies from the Southwest Atlantic. See the Status Review Report for oceanic whitetip shark at <https://www.fisheries.noaa.gov/resource/document/endangered-species-act-status-review-report-oceanic-whitetip-shark-carcharhinus>.

² Life history parameters are based on studies from the western North Atlantic Ocean and Gulf of Mexico. See the HMS Hammerhead Sharks Data Workshop Final Report at <https://sedarweb.org/documents/sedar-77-data-workshop-report-not-peer-reviewed/>.

3.1.6 Habitat

The Magnuson-Stevens Act requires NOAA Fisheries to identify and describe essential fish habitat (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). NOAA Fisheries originally described and identified

EFH and related EFH regulatory elements for all HMS in the management unit in 1999, some of which were updated in 2003 via Amendment 1 to the 1999 FMP. EFH boundaries published in the 1999 FMP and Amendment 1 to the 1999 FMP were updated in Amendment 10 to the 2006 Consolidated HMS FMP (82 FR 42329, September 7, 2017). The EFH Mapper, an interactive tool for viewing important habitats where fish species spawn, grow, or live is available online at <https://www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper>.

The geographic range of oceanic whitetip shark is very broad in the Northwest Atlantic (Maine through Florida), the Gulf of Mexico, and U.S. territorial waters of the Caribbean Sea. Oceanic whitetip shark EFH for all life stages occurs in U.S. waters of the Atlantic Ocean, Caribbean Sea, and Gulf of Mexico (85 FR 12898, March 5, 2020). In the Atlantic Ocean, EFH is designated in waters greater than 200 meters in depth from offshore of the North Carolina/Virginia border to the Blake Plateau, which extends off the coast of North Carolina to central Florida. In the Gulf of Mexico, EFH is designated at the Alabama/Florida border and south of eastern Texas. All U.S. waters of the Caribbean Sea is considered to be oceanic whitetip shark EFH. Areas of high occurrence are also off of the east coast of Florida; Charleston Bump off the southeast United States; and between Florida, Cuba, and the Yucatan Peninsula. No nurseries and pupping groups have been identified in U.S. waters for oceanic whitetip shark.

Geographic ranges for neonate and young-of-year (YOY) scalloped hammerhead EFH include the Atlantic east coast from North Inlet (i.e., Winyah Bay, South Carolina to the mid-east coast of Florida), including estuarine habitats. Also included are coastal areas in the Gulf of Mexico including those adjacent to Charlotte Harbor and Tampa Bay, coastal areas of Florida around Apalachicola and Cape San Blas, and coastal Texas. EFH for neonates and YOY is located specifically in waters with temperatures of 23.2 to 30.2 °C, salinities of 27.6 to 36.3 parts per thousand, dissolved oxygen of 5.1 to 5.5 mL/L, depths of 5 to 6 meters, and in areas with mud and seagrass substrate. For juveniles and adults, EFH in the Atlantic Ocean ranges from North Carolina to the Florida Keys, including Florida Bay and the Dry Tortugas, and there is also EFH located in the northern Gulf of Mexico from eastern Louisiana to Pensacola, Florida (Mississippi Delta to DeSoto Canyon).

Updates made in Amendment 10 to the 2006 Consolidated HMS FMP included removing the big bend region of Florida from EFH, and adding coastal waters off Texas and Apalachicola, Florida based on models and recommendations from the Southeast Fisheries Science Center. Due to the acquisition of new model data, EFH boundaries for juvenile and adult scalloped hammerhead sharks were adjusted to exclude Texas and western Louisiana coastal waters. To reflect all available information on distribution and habitat utilization, and meet requirements for updates to be based on the best scientific information available, slight modifications were made to EFH boundaries to exclude inshore and riverine habitats that did not contain data points.

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, shark

fishery data are typically analyzed by gear type. Additionally, bycatch and safety issues are also better addressed separately by gear type.

Authorized gear types routinely used in Atlantic shark fisheries include:

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

In most places of the Atlantic, a Shark Directed or Incidental LAP is required to commercially harvest Atlantic sharks other than smoothhound sharks. Under the HMS LAP program, the agency is no longer issuing new commercial permits. Shark LAP holders are authorized to use PLL or BLL gear, handgear, and gillnet gear. These fishermen 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 directed LAP holders ranges from 0 to 55 LCS; there is no limit on the amount of small coastal sharks (except no more than eight blacknose sharks) and pelagic sharks retained. Incidental LAP holders can retain three LCS and a total of 16 small coastal sharks and pelagic sharks combined (except no more than 8 blacknose sharks). The majority of sharks landed in HMS fisheries are by Shark Directed LAP holders using BLL gear, gillnet, or rod and reel. See Tables 3.3 through 3.5 for commercial landings and disposition status for commercial PLL and non-PLL HMS fisheries from 2017 through 2021.

Based on eDealer data from 2017 through 2021, no oceanic whitetip sharks were landed in the commercial sector in U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea. Furthermore, interactions between the PLL fishery and oceanic whitetip sharks are low. According to PLL HMS logbook data from the same time period, 2,856 (87 percent) were discarded alive and 425 (13 percent) were discarded dead and according to the Pelagic Observer Program, in 2020, 4 were released alive and 1 was lost at the surface. The most recent harvest of oceanic whitetip sharks in the recreational fishery occurred in 2021 and 2019, with one shark harvested in each year (Table 3.6). Prior to that, the last reported harvest of oceanic whitetip shark was in 2015 with 132 individuals caught in Puerto Rico (NMFS 2020).

Based on eDealer data from 2017 through 2021, 321,653 lb dw of LCS hammerhead sharks were landed in commercial HMS fisheries in U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea (Tables 3.3 and 3.5). During the same period, 144 LCS hammerhead sharks were harvested in the recreational fishery (Table 3.6).

In the U.S. Caribbean region, the majority of commercial vessels participating in HMS fisheries are small and limited in range, hold capacity, crew size, and market infrastructure. Vessel owners in the U.S. Caribbean may obtain an HMS Commercial Caribbean Small Boat permit. This open access permit allows vessel owners to land and then sell (without a dealer) a limited number of HMS per trip. In 2021, NOAA Fisheries published a final rule that modified the shark retention limit for these permit holders from none to three non-prohibited smoothhound sharks, non-blacknose small coastal sharks, or large coastal (other than hammerhead, silky, and sandbar)

sharks (combined) per vessel per trip (86 FR 22882, April 30, 2021). Under that rule, these vessel owners are still prohibited from retaining and selling oceanic whitetip and LCS hammerhead sharks.

Fishermen may fish recreationally for sharks with handline or rod and reel gear, if they hold a shark endorsement along with an HMS Angling, HMS Charter/Headboat, 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 without removing it from the water. The current recreational trip bag limit for hammerhead sharks is one (great, smooth or scalloped hammerhead shark) per vessel. If a hammerhead shark is retained, no tunas, billfish, or swordfish may be retained. For all other sharks, including oceanic whitetip, the current retention limit is also one per vessel. Retention of Atlantic sharpnose and bonnethead sharks each have a retention limit of one per person, and smoothhound sharks have no retention limit. See Table 3.6 for recreational landings of hammerhead sharks and oceanic whitetip sharks by region from 2017 through 2021.

Table 3.3 Commercial Landings of Hammerhead Sharks by Region in Pounds Dressed Weight, 2017-2021

Commercial Landings	Management Group	2017	2018	2019	2020	2021
Atlantic	Scalloped Hammerhead	4,919	5,927	C	12,024	9,351
	Smooth Hammerhead	1,193	530	661	0	C
	Great Hammerhead	17,646	22,881	26,410	27,529	33,464
Gulf of Mexico	Scalloped Hammerhead	15,151	26,303	C	3,755	3,419
	Smooth Hammerhead	0	0	0	0	0
	Great Hammerhead	18,136	31,425	33,010	10,756	16,407

	Unclassified, assigned to Hammerheads	0	0	370	231	155
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C = Landings not disclosed due to reasons of confidentiality.

Source: eDealer.

Table 3.4 Disposition Status of Oceanic Whitetip Sharks Caught on Pelagic Longline Trips from all Regions in Number of Sharks, 2017-2021

Disposition Status	2017	2018	2019	2020	2021
Discarded Dead	116	67	117	82	43
Discarded Alive	890	422	873	444	227

C = Landings not disclosed due to reasons of confidentiality.

Source: Commercial vessel logbook data.

Table 3.5 Commercial Landings of Hammerhead Shark from the U.S. Caribbean Region in Pounds Dressed Weight, 2017-2021

Management Group	2017	2018	2019	2020	2021
Scalloped Hammerhead	C	C	C	C	C
Smooth Hammerhead	-	-	-	-	-
Great Hammerhead	C	C	882.5	C	C

Note: Years where there is no estimate of commercial landings available for a particular species are marked with a "-". C = Landings not disclosed due to reasons of confidentiality.

Source: Southeast Fisheries Science Center and the Department of Natural Environmental Resources – Puerto Rico.

Table 3.6 Estimated Recreational Harvest of Hammerhead and Oceanic Whitetip Sharks by Region in Number of Sharks, 2017-2021

Recreational Landings	Management Group	2017	2018	2019	2020	2021
Atlantic	Scalloped Hammerhead	-	-	1	-	-
	Smooth Hammerhead	-	-	-	-	-

	Great Hammerhead	-	-	1	5	-
	Hammerhead Undefined	-	-	-	-	-
Gulf of Mexico	Scalloped Hammerhead	58	30	3	1	7
	Smooth Hammerhead	-	-	-	-	-
	Great Hammerhead	-	-	-	36	2
	Hammerhead Undefined	-	-	-	-	-
All Regions	Oceanic Whitetip	-	-	1	-	1

Note: Years where there is no estimate of recreational harvest available for a particular species are marked with a "-". Source: Southeast Region Headboat Survey and Marine Recreational Information Program.

3.2.2 Fishery Participants

In order to understand the scope of potential impact of this action on permit holders, NOAA Fisheries analyzed the number of vessels and dealer permits issued. As of October 2022, there were 206 Shark Directed LAPs, 241 Shark Incidental LAPs, 76 HMS Commercial Caribbean Small Boat permits, 4,175 HMS Charter/Headboat permits (with 2,994 shark endorsements and 1,873 commercial sale endorsements), 23,607 Angling permits (with 12,978 shark endorsements), and 603 Atlantic Tunas General category and Swordfish General Commercial permits (with 388 shark endorsements). For more information regarding the distribution of these permits across states and territories please see the HMS SAFE Report.

3.2.3 Economic Environment

From 2019 through 2021, the total annual revenue for shark fisheries, including fin prices for all species has remained depressed in comparison with revenues observed in previous years. Revenue for hammerhead sharks has varied and there is no price per pound for oceanic whitetip sharks due to a lack of commercial landings. Average ex-vessel prices and total revenue from oceanic whitetip shark and LCS hammerhead sharks are shown in Table 3.7. Tables 3.8 and 3.9 show median input costs for PLL vessel trips and BLL vessel trips, respectively. For more information on the overall economic status of HMS fisheries, please see Chapter 8 of the HMS SAFE Report.

Table 3.7 Average Ex-Vessel Price per Pound (U.S. Dollars) and Total Shark Ex-Vessel Annual Revenue, 2017-2021

Management Group	2017	2018	2019	2020	2021
Atlantic Hammerhead	\$0.46	\$0.51	\$0.51	\$0.63	\$0.74
Gulf of Mexico Hammerhead	\$0.79	\$0.57	\$0.90	\$0.77	\$0.77
Oceanic Whitetip	\$0	\$0	\$0	\$0	\$0
Average Annual Fin Price Per Pound for all Species	\$8.79	\$9.38	\$8.04	\$6.66	\$5.75
Annual Total Revenue for Shark Fisheries	\$2,791,306	\$2,980,245	\$2,280,126	\$2,219,348	\$2,393,285

Note: Given the inflation that has recently occurred, all prices are adjusted to REAL 2021 dollars using the GDP Deflator. Source: eDealer.

Table 3.8 Median Input Costs (U.S. Dollars) for Pelagic Longline Vessel Trips, 2017-2021

Input Costs	2017	2018	2019	2020	2021
Fuel	\$2,167	\$2,466	\$2,000	\$1,920	\$1,969
Bait	\$2,000	\$2,079	\$2,000	\$2,000	\$1,475
Ice Costs	\$1,080	\$1,173	\$900	\$765	\$195
Grocery Expenses	\$900	\$900	\$900	\$900	\$900
Other Trip Costs	\$885	\$1,000	\$965	\$800	\$1,225

Source: eDealer; dealer weigh-out slips from the Southeast Fisheries Science Center and Northeast Fisheries Science Center; eBFT

Table 3.9 Median Input Costs (U.S. Dollars) for Bottom Longline Vessel Trips, 2017-2021

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

Source: United Data Processing.

3.3 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, NOAA Fisheries Office of Sustainable Fisheries consults with the Office of Protected Resources to determine

what impacts fishery management actions could have on threatened or endangered marine species and what actions can be taken to reduce or eliminate negative impacts. 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 NOAA Fisheries. At the conclusion of formal consultation, NOAA Fisheries issues a BiOp that analyzes the effects of the action. If NOAA Fisheries concludes the action will jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat, NOAA Fisheries specifies Reasonable and Prudent Alternatives to the proposed action. If NOAA Fisheries concludes the action will not jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat, NOAA Fisheries 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.

On July 3, 2014, NOAA Fisheries published a final rule that, among other things, listed the Central and Southwest Atlantic DPS of scalloped hammerhead sharks as threatened under the ESA (79 FR 38214). On January 30, 2018, NOAA Fisheries published a final rule that, among other things, determined that oceanic whitetip sharks warranted listing as threatened under the ESA (83 FR 4153). In May 2020, NOAA Fisheries issued a BiOp for the Atlantic HMS PLL fishery and a BiOp for the Atlantic HMS non-PLL fisheries. Both BiOps stated that the continued operation of HMS fisheries are not likely to jeopardize the continued existence of sea turtles, sawfish, Atlantic sturgeon, scalloped hammerhead sharks (Central and Southwest Atlantic DPS), oceanic whitetip sharks, and giant manta ray. However, in early July 2022, NOAA Fisheries requested reinitiation of consultation on the effects of the Atlantic HMS PLL fishery due to new information on mortality of giant manta ray. Pending completion of this consultation, the fishery continues to operate consistent with the Reasonable and Prudent Measures and Terms and Conditions of the two 2020 BiOps. This action considers the conservation recommendations in those BiOps regarding oceanic whitetip and scalloped hammerhead sharks, and is not anticipated to 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. While any BiOp resulting from the upcoming reinitiation may impact the HMS PLL fishery, giant manta ray interactions with the HMS PLL fishery are low, with total takes estimated to be well below the levels of take authorized under the incidental take statement in the 2020 BiOp. Additionally, the species is not thought to be in peril in the Atlantic, the level of potential mortalities is considered to be low, and extrapolated mortalities may overstate the fishery’s effects on the species. Any of the covered ESA-listed species taken would be considered against the Incidental Take Statement in both 2020 BiOps for all HMS fisheries, as long as the operations are consistent with the Reasonable and Prudent Measures in that BiOp, namely: any protected resources caught while engaging in research activities must be safely handled, resuscitated, and released, and all protected resource interactions must be reported to NOAA Fisheries.

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

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

Fishermen participating in Category I or II fisheries are required to be registered under MMPA and, if selected, to accommodate an observer aboard their vessels. Vessel owners or operators, or fishermen, in Category I, II, or III fisheries must report all incidental mortalities and injuries of marine mammals during the course of commercial fishing operations to NOAA Fisheries. There are currently no regulations requiring recreational fishermen to report takes, nor are they authorized to have incidental takes (i.e., they are illegal). NOAA Fisheries does require reporting and authorizes takes by charter/headboat fishermen (considered “commercial” by MMPA). No takes in HMS fisheries have been reported to NOAA Fisheries to date.

These MMPA regulations include the Gulf of Maine and Mid-Atlantic tuna, shark, and swordfish hook-and-line fishery; Southeast Mid-Atlantic and Gulf of Mexico shark BLL fisheries; Mid-Atlantic, southeastern Atlantic, and Gulf of Mexico pelagic hook-and-line fisheries; and commercial passenger fishing vessel (charter/headboat) fisheries. All of these fisheries fall under Category III of the MMPA Classifications of Commercial Atlantic HMS Fisheries. With strict control and operations through the regulation, these types of fishing gear are not likely to result in mortality or serious injury of marine mammals.

Please refer to Sections 3.8 and 3.9.9 of the 2006 Consolidated 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.

3.4 References

- Hayes, C.G., Jiao, Y., Cortéz, E. 2009. Stock Assessment of Scalloped Hammerheads in the Western North Atlantic Ocean and Gulf of Mexico. *North American Journal of Fisheries Management*. 12 pp.
- NMFS. 2006. Final Consolidated Atlantic Highly Migratory Species Fishery Management Plan. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Office of Sustainable Fisheries, Highly Migratory Species Management Division, 1315 East West Highway, Silver Spring, MD. Public Document. 1600 pp.

4.0 ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

As described earlier, NOAA Fisheries has developed various alternatives in this EA to consider prohibiting commercial and recreational retention of oceanic whitetip sharks and hammerhead sharks. This chapter details the environmental effects of the various alternatives considered.

4.1 Impacts of Alternatives for Prohibiting Retention of Oceanic Whitetip Sharks

NOAA Fisheries is analyzing two alternatives for oceanic whitetip sharks: maintaining the status quo and adding oceanic whitetip sharks to the prohibited shark species group using the criteria in § 635.34(c) in order to meet the objectives stated in Chapter 1.

4.1.1 Ecological Evaluation

Alternative A1 (No Action)

Under Alternative A1, the No Action alternative, NOAA Fisheries would not implement any new management measures for oceanic whitetip sharks. Under this alternative, retention of oceanic whitetip sharks for vessels targeting tunas, swordfish, and/or billfish with PLL gear onboard would continue to be prohibited. The HMS Commercial Caribbean Small Boat permit holders would continue to be prohibited from retaining oceanic whitetip sharks. Commercial permit holders issued a Shark Directed or Incidental LAP using non-PLL gear (e.g., BLL, gillnet, rod and reel, handline, and bandit gear) would still be authorized to retain, possess, land, sell, or purchase oceanic whitetip sharks subject to existing commercial regulations. Retention of oceanic whitetip sharks by recreational HMS permit holders (those who hold HMS Angling or Charter/Headboat permits, or those who hold Atlantic Tunas General category and Swordfish General Commercial permits when participating in a registered HMS tournament) where tunas, swordfish, and/or billfish are also retained or possessed would continue to be prohibited. However, those recreational HMS permit holders, provided they also have a shark endorsement, would still be authorized to fish for, retain, and land ocean whitetip sharks when not retaining tunas, swordfish, and/or billfish.

Although retention of oceanic whitetip sharks is allowed in certain circumstances in commercial and recreational HMS fisheries, landings remain low. From 2017 through 2021, no oceanic whitetip sharks were landed in HMS commercial fisheries in U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea. During that same time period, two oceanic whitetip sharks were harvested in the recreational sector. See Section 3.2.1 for more information on interactions between HMS fisheries and oceanic whitetip sharks. Under the ESA, oceanic whitetip shark is listed as a threatened species. Therefore, additional protections are needed to assist in the recovery of the species. If no management measures are implemented, small numbers of oceanic whitetip sharks could be landed and fishing pressure could hinder recovery. Alternative A1 would likely result in short- and long-term minor adverse ecological impacts for oceanic whitetip shark and is not consistent with the conservation recommendations in the Atlantic HMS PLL fishery BiOp and non-PLL fisheries BiOp.

Alternative A2 (Preferred Alternative)

Under Alternative A2, the preferred alternative, NOAA Fisheries would add oceanic whitetip sharks to the prohibited shark species group (Table 1 of Appendix A to 50 CFR Part 635) to prohibit the retention of oceanic whitetip sharks. This alternative would prohibit the retention, possession, landing, sale, and purchase of oceanic whitetip sharks or shark parts in all HMS fisheries.

Interactions with oceanic whitetip sharks would still occur, but fishermen could not kill any oceanic whitetip sharks that were caught and would be required to release any oceanic whitetip sharks with a minimum of harm. As such, the only remaining sources of mortality would be from sharks that are dead at haulback or sharks that die after being released (i.e., post-release mortality). Given the low interactions between HMS commercial and recreational fisheries and oceanic whitetip sharks, mortality is expected to be low. See Section 3.2.1 for more information on interactions between HMS fisheries and oceanic whitetip sharks. Current regulations provide four criteria for NOAA Fisheries to consider when adding a species to the prohibited shark species group. These criteria are:

- 1) Biological information indicates that the stock warrants protection;
- 2) Information indicates that the species is rarely encountered or observed caught in HMS fisheries;
- 3) Information indicates that the species is not commonly encountered or observed caught as bycatch in fishing operations for species other than HMS; and
- 4) The species is difficult to distinguish from other prohibited species.

At this time, oceanic whitetip sharks meet the first, second, and third criteria. Regarding the first criterion, as a result of a status review conducted under the ESA, oceanic whitetip sharks are listed as threatened throughout their range, which indicates that the stock warrants protection. Regarding the second criterion, few oceanic whitetip sharks are caught in HMS fisheries. From 2017 through 2021, no oceanic whitetip sharks were landed in the commercial sector and interactions between HMS fisheries and oceanic whitetip sharks are low. According to PLL HMS logbook data from the same time period, all individuals were discarded (2,856 were discarded alive and 425 were discarded dead) and according to eDealer data, there have been no observed interactions between oceanic whitetip sharks and non-PLL fisheries. In the recreational sector, only two oceanic whitetip sharks have been reported as harvested in the last five years (Table 3.6). Thus, the species is not commonly encountered or observed in HMS fisheries compared to target species. Regarding the third criterion, oceanic whitetip sharks are not often seen in non-HMS fisheries, and are therefore not commonly encountered or observed as bycatch. Oceanic whitetip sharks do not meet the fourth criterion as they can be identified relatively easily by their large, rounded, and white-tipped dorsal and pectoral fins. Species that meet at least two of the four criteria may be considered to be added to the prohibited shark species group.

Alternative A2 would likely result in short-term neutral and long-term minor beneficial ecological impacts. In the commercial and recreational shark fisheries, oceanic whitetip sharks are not often targeted or landed when compared to other species caught in relevant fisheries. While prohibiting the retention of oceanic whitetip sharks could result in fishing effort shifting towards other similar pelagic shark species or to catch-and-release of pelagic sharks, the effort shift is likely small because oceanic whitetip sharks are rarely targeted. Dead discards, which

account for the majority of oceanic whitetip shark mortality, may still occur. To the extent that any fishing effort shifts away from areas where oceanic whitetip shark are encountered as a result of this action, the number of dead discards may be slightly lower than status quo. However, given that PLL and recreational fishermen (in certain circumstances) have been prohibited from retaining oceanic whitetip sharks since 2011 and the remaining gears rarely encounter the species, it is likely that dead discard mortality would remain the same under this alternative as under Alternative A1. However, NOAA Fisheries feels it is appropriate to add oceanic whitetip sharks to the prohibited shark species group for two reasons. First, this alternative would meet the conservation recommendations of the 2020 BiOps to promote conservation and recovery of this threatened species. Second, oceanic whitetip sharks meet three out of four criteria to be added to the prohibited shark species group. Therefore, NOAA Fisheries prefers this alternative at this time.

4.1.2 Social and Economic Impacts

Alternative A1 (No Action)

Under Alternative A1, NOAA Fisheries would not implement any new management measures for oceanic whitetip sharks. Relative to other species, oceanic whitetip sharks are caught infrequently. Additionally, oceanic whitetip shark landings in the recreational rod and reel fishery have been sporadic with only two individuals reported as harvested in the last five years. Neutral socioeconomic impacts are expected because current recreational and commercial fishing practices would continue unaltered.

Alternative A2 (*Preferred Alternative*)

Under this alternative, NOAA Fisheries would add oceanic whitetip sharks to the prohibited shark species group to prohibit any harvest or retention of oceanic whitetip sharks in all HMS fisheries. Oceanic whitetip sharks have not been targeted in commercial and recreational fisheries in a number of years and the species is usually caught incidentally while fishing for other species. Thus, oceanic whitetip shark measures are unlikely to affect total effort and businesses that support commercial and recreational fishing practices. As such, NOAA Fisheries believes that a prohibition on oceanic whitetip shark landings would likely result in neutral to very minor negative socioeconomic impacts for commercial and/or recreational fishermen. Commercially, the overall socioeconomic impacts associated with these reductions in revenue is not substantial because oceanic whitetip shark landings are extremely rare (the last commercial landing was in 2014) and do not contribute substantially to overall shark fishery revenues. It is possible that Alternative A2 could limit fishing opportunities for charter/headboat operators resulting in fewer fishing trips; however, given the limited recreational harvest in recent years, NOAA Fisheries feels this result is unlikely. To the extent that recreational fishermen and charter/headboat operators feel they need to change their fishing practices to avoid or possibly discard oceanic whitetip sharks without harm, there could be some very minor additional fuel costs associated with discarding or avoiding oceanic whitetip sharks in commercial and recreational fisheries.

4.2 Impacts of Alternatives for Hammerhead Sharks

4.2.1 Ecological Evaluation

Alternative B1 (No Action)

Under Alternative B1, the No Action alternative, NOAA Fisheries would not implement any new management measures for hammerhead sharks. Alternative A1 would continue to allow the landing and sale of all hammerhead sharks by vessels issued a Shark Directed or Incidental LAP (excluding those caught with PLL gear) or issued both a LAP and an HMS Charter/Headboat permit with a commercial sale endorsement when tunas, swordfish, and/or billfish are not retained or possessed on board, or offloaded from, the vessel. Additionally, recreational HMS permit holders would continue to be authorized to retain and land hammerhead sharks when tunas, swordfish, and/or billfish are not retained or possessed. From 2017 through 2021, 321,653 lb dw of LCS hammerhead sharks were landed in commercial HMS fisheries in U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea (Tables 3.3 and 3.5). During that same time period, 144 LCS hammerhead sharks were harvested in the recreational fishery (see Table 3.6).

Multiple sources indicate that the Atlantic population (including both the Northwestern Atlantic and Gulf of Mexico DPS and the Central and Southwest Atlantic DPS) of scalloped hammerhead sharks has experienced declines over the past few decades (Miller et al. 2014, Hayes et al. 2009, Jiao et al. 2011, Baum et al. 2003, Beerkircher et al. 2004, Myers et al. 2007). Although there is no stock assessment for the Central and Southwest Atlantic DPS of scalloped hammerhead sharks, Miller et al. (2014) concluded that abundance numbers are likely similar to, and probably worse than, the results of the Hayes et al. (2009) assessment of the Northwestern Atlantic and Gulf of Mexico DPS (i.e., depleted by approximately 83 percent since 1981). Furthermore, the Central and Southwest Atlantic DPS continues to see heavy fishing pressure by commercial and artisanal fisheries outside of U.S. jurisdiction (mainly in Brazil, Central America, and the Caribbean) and therefore U.S. action alone cannot rebuild the scalloped hammerhead shark population. However, if no management measures are implemented, Alternative B1 could result in short- and long-term minor adverse ecological impacts for the Central and Southwest Atlantic DPS of scalloped hammerhead sharks. The No Action alternative is not consistent with the conservation recommendations in the 2020 Atlantic HMS PLL fishery BiOp and non-PLL fisheries BiOp.

Alternative B2

Under Alternative B2, NOAA Fisheries would prohibit the commercial and recreational retention of scalloped hammerhead sharks in the U.S. Caribbean region. Currently, commercial vessels with the appropriate permits and using BLL, gillnet, or handgear can retain scalloped hammerhead sharks. However, from 2017 through 2021 there were no reported commercial or recreational landings of scalloped hammerhead sharks in the U.S. Caribbean region. Alternative B2 would prohibit retention and/or possession of scalloped hammerhead sharks for all HMS commercial and recreational permit holders in the U.S. Caribbean region, including in those instances where it was previously authorized (e.g., recreational permit holders with a shark endorsement when tunas, swordfish, and/or billfish are not retained). This alternative is designed

to be consistent with the conservation recommendations in the 2020 Atlantic HMS PLL fishery BiOp and non-PLL fisheries BiOp.

Alternative B2 would likely result in neutral to minor beneficial ecological impacts. In the commercial and recreational shark fisheries in the U.S. Caribbean, scalloped hammerhead sharks are not often targeted or landed when compared to other species caught in relevant fisheries. While prohibiting the retention of scalloped hammerhead sharks could result in fishing effort shifting towards other similar LCS shark species, the effort shift is likely small because scalloped hammerhead sharks are rarely targeted. However, due to the difficulty in differentiating between the various species of LCS hammerhead sharks (i.e., great, smooth, and scalloped hammerhead sharks), there may be continued mortality from fishermen bringing hammerhead sharks on board to identify the species (increasing the likelihood of post-release mortality) or unintentionally retaining a scalloped hammerhead shark due to misidentification.

Alternative B3

Under Alternative B3, NOAA Fisheries would prohibit the commercial and recreational retention of scalloped hammerhead sharks in U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea. This alternative is similar to Alternative B2, except it is not exclusive to the U.S. Caribbean region. Neutral to minor beneficial ecological impacts are expected under Alternative B3. While prohibiting the retention of scalloped hammerhead sharks could result in fishing effort shifting towards other similar LCS shark species, the effort shift is likely to be small because scalloped hammerhead sharks are not often targeted in commercial and recreational shark fisheries when compared to other species caught in relevant fisheries. However, due to the difficulty in differentiating between the various species of LCS hammerhead sharks (i.e., great, smooth, and scalloped hammerhead sharks), there may be continued mortality from fishermen bringing hammerhead sharks on board to identify the species (increasing the likelihood of post-release mortality) or unintentionally retaining a scalloped hammerhead shark due to misidentification.

Alternative B4 (*Preferred Alternative*)

Under Alternative B4, the preferred alternative, NOAA Fisheries would prohibit the commercial and recreational retention of all LCS hammerhead sharks in the U.S. Caribbean region. Currently, commercial vessels with gear types other than PLL (e.g., BLL, gillnet, rod and reel, handline, or bandit gear) can retain all hammerhead sharks. This alternative would prohibit retention and/or possession of LCS hammerhead sharks for all HMS commercial and recreational permit holders in the U.S. Caribbean region, including in those instances where it was previously authorized (i.e., recreational permit holders with a shark endorsement when tunas, swordfish, and/or billfish are not retained). This alternative is designed to be consistent with the conservation recommendations in the 2020 Atlantic HMS PLL fishery BiOp and non-PLL fisheries BiOp, and will have minor beneficial ecological impacts. Since fishermen would be unable to target any LCS hammerhead sharks in the U.S. Caribbean region, lower rates of mortality are expected. Additionally, this alternative would eliminate the concern over misidentification between various species of hammerhead sharks that could lead to

unintentionally retaining scalloped hammerhead sharks when mistaken for great or smooth hammerhead sharks.

Alternative B5

Under Alternative B5, NOAA Fisheries would prohibit the retention of LCS hammerhead sharks in U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea. This alternative would prohibit retention and/or possession of LCS hammerhead sharks for all HMS commercial and recreational permit holders, including in those instances where it was previously authorized (i.e., recreational permit holders with a shark endorsement when tunas, swordfish, and/or billfish are not retained). Minor beneficial ecological impacts are expected as a result of Alternative B5. Fishermen would be unable to target any LCS hammerhead sharks, and the lower rates of bycatch would reduce the rate of mortality. Additionally, this alternative would eliminate the possibility of unintentionally retaining a scalloped hammerhead shark due to misidentification between the various species of hammerhead sharks.

4.2.2 Social and Economic Impacts

Alternative B1 (No Action)

Relative to other target species, scalloped hammerhead sharks are caught infrequently. On average, approximately 16,170 lb dw of scalloped hammerhead sharks were commercially landed annually from 2017 through 2021 in U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea, according to eDealer data. During this time period, based on the average ex-vessel prices per pound of hammerhead shark meat (\$0.67) and fins (\$7.72), the average annual gross revenue for scalloped hammerhead sharks is estimated to be approximately \$10,753. This represents less than 0.5 percent of the average annual shark fisheries revenue from 2017 through 2021. In the recreational sector, on average approximately 20 scalloped hammerhead sharks were reported kept in the Gulf of Mexico annually from 2017 through 2021, with rare reports of scalloped hammerhead sharks in the Atlantic Ocean (one individual in 2019). Neutral economic impacts are expected as a result of this alternative because income levels may be maintained in the commercial fishery and recreational vessels would continue to be able to possess hammerhead sharks.

Alternative B2

Under this alternative, HMS permit holders within the U.S. Caribbean region would no longer be authorized to retain scalloped hammerhead sharks and could experience neutral to minor adverse socioeconomic impacts. Between 2017 and 2021 there were no landings of scalloped hammerhead sharks in the U.S. Caribbean region, according to HMS logbook and eDealer data. Because Alternative B2 would prohibit the retention of scalloped hammerhead sharks in the U.S. Caribbean region, it would likely result in minor, adverse socioeconomic impacts to commercial fishermen. Potential costs may arise as a result of the missed opportunity of retaining an incidentally caught scalloped hammerhead or the additional labor associated with avoiding or discarding one. Although Alternative B2 could limit fishing opportunities for charter/headboat operators resulting in fewer fishing trips, it is not likely that commercial fishermen would alter

fishing practices for tunas, swordfish, and/or billfish because scalloped hammerhead sharks account for little to none of the landings in the U.S. Caribbean region. Furthermore, the last reported recreational harvest (or dead discard) of scalloped hammerhead sharks in the U.S. Caribbean region was in 2012. Therefore, this alternative is not expected to impact recreational fishermen, as the data suggests there are little to no interactions with the species.

Alternative B3

Under this alternative, HMS permit holders would no longer be authorized to retain scalloped hammerhead sharks in U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea. On average, a total of approximately 16,170 lb dw of scalloped hammerhead sharks were commercially landed annually from 2017 through 2021 in U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea, according to eDealer data. During this time-period, based on the average ex-vessel prices per pound of \$0.67 and \$7.72 for hammerhead shark meat and fins, respectively, in the Atlantic and Gulf of Mexico, the average annual gross revenue for scalloped hammerhead sharks in the fishery would be approximately \$10,753, which represents less than 0.5 percent of the average annual shark fisheries revenue from 2017 through 2021. Because Alternative B3 would prohibit the retention of scalloped hammerhead sharks in U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea, it would likely result in minor, adverse socioeconomic impacts to commercial fishermen because fishermen would no longer be able to land and sell scalloped hammerhead sharks and the fishery could potentially lose annual revenues of approximately \$10,753. There could also be some minor costs associated with discarding or avoiding scalloped hammerhead sharks. Although Alternative B3 could limit fishing opportunities for charter/headboat operators resulting in fewer fishing trips, it is not likely that commercial fishermen would alter fishing practices for tunas, swordfish, and/or billfish, because scalloped hammerhead shark landings constitute a small portion of all landings and revenue. Furthermore, from 2017 through 2021, recreational fishermen harvested only 100 scalloped hammerhead sharks. Given the low retention rate of scalloped hammerhead sharks by recreational fishermen, this alternative is not likely to alter fishing practices and would have a minimal impact to the recreational fishing sector.

Alternative B4 (*Preferred Alternative*)

Under Alternative B4, the preferred alternative, HMS permit holders within the U.S. Caribbean region would no longer be authorized to retain any LCS hammerhead sharks (i.e., great, smooth, and scalloped hammerhead sharks) and could experience minor, adverse socioeconomic impacts. Between 2017 and 2021 there were no landings of any hammerhead sharks in the U.S. Caribbean region, according to HMS logbook and eDealer data. Because Alternative B4 would prohibit the retention of any LCS hammerhead sharks in the U.S. Caribbean region, it would likely result in neutral to minor adverse socioeconomic impacts to commercial fishermen. Even though there is little to no catch of hammerhead sharks in the U.S. Caribbean region, there could be a cost associated with the missed opportunity of retaining an incidentally caught hammerhead shark or the additional labor associated with avoiding or discarding one. Although Alternative B4 could limit fishing opportunities for charter/headboat operators resulting in fewer fishing trips, it is not

likely that commercial fishermen would alter fishing practices for tunas, swordfish, and/or billfish, because hammerhead sharks account for few to none of the landings in the U.S. Caribbean region. Furthermore, from 2017 through 2021, there was no reported recreational harvest of LCS hammerhead sharks in the U.S. Caribbean region. Therefore, this alternative is not expected to impact recreational fishermen, as the data suggests there are little to no interactions with these species.

Alternative B5

Under this alternative, HMS permit holders would no longer be authorized to retain any LCS hammerhead sharks (i.e., great, smooth, and scalloped hammerhead sharks) in U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea. On average, a total of approximately 321,653 lb dw of hammerhead sharks were commercially landed annually from 2017 through 2021 in U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea, according to eDealer data. Based on the ex-vessel prices per pound for hammerhead shark meat (\$0.67) and fins (\$7.72), this is equivalent to approximately \$42,794 in average net gross revenues for the LCS hammerhead shark fishery and represents less than 2 percent of annual shark fisheries revenue from 2017 through 2021. Because Alternative B5 would prohibit the retention of all LCS hammerhead sharks in U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea, it would likely result in minor adverse socioeconomic impacts to commercial fishermen, as they would no longer be able to land hammerhead sharks and the fishery could potentially lose annual revenues of approximately \$42,794. There could also be some minor costs associated with discarding or avoiding hammerhead sharks. Although Alternative B5 could limit fishing opportunities for charter/headboat operators resulting in fewer fishing trips, it is not likely that commercial fishermen would alter fishing practices for tuna and tuna-like species, because hammerhead shark landings constitute a small portion of all landings and revenues. Furthermore, from 2017 through 2021, recreational fishermen reported harvest of 144 LCS hammerhead sharks. Given the low retention rate of LCS hammerhead sharks by recreational fishermen, this alternative is not likely to alter fishing practices and would have a minimal impact to the recreational fishing sector.

4.2.3 Summary

NOAA Fisheries prefers to select Alternative A2 which would add oceanic whitetip sharks to the prohibited shark species group using the criteria in § 635.34(c). If implemented, this alternative would extend the existing prohibition on retention of oceanic whitetip sharks in the PLL fishery to the non-PLL fisheries in U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea. NOAA Fisheries also prefers Alternative B4, which would prohibit retention of LCS hammerhead sharks in the U.S. Caribbean region by commercial and recreational HMS permit holders. NOAA Fisheries does not prefer the No Action alternatives (Alternatives A1 and B1) since these alternatives do not meet the objectives of the rule nor the conservation recommendations provided by either of the 2020 BiOps. At this time, NOAA Fisheries does not prefer Alternatives B2, B3, and B5. With regard to Alternatives B2 and B3, NOAA Fisheries recognizes species identification of LCS hammerhead sharks can be difficult. Therefore, by not

prohibiting smooth and great hammerhead sharks, scalloped hammerhead sharks could experience continued mortality due to misidentification. With regards to Alternative B5, NOAA Fisheries does not prefer this alternative as it goes well beyond the conservation recommendations put forth by the 2020 BiOps and would unnecessarily limit commercial and recreational fisheries throughout the Atlantic and Gulf of Mexico from accessing hammerhead sharks.

4.3 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 NOAA Fisheries 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 NOAA Fisheries determines that fishing gears are having an adverse effect on HMS EFH, or other species' EFH, then NOAA Fisheries must include management measures that minimize adverse effects to the extent practicable.

In the 2006 Consolidated HMS FMP and Amendment 1 to the 2006 Consolidated HMS FMP, NOAA Fisheries reviewed the various HMS gear types with the potential to affect EFH. Based on the best information available at that time, NOAA Fisheries 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. NOAA Fisheries conducted a literature review as part of Draft Amendment 10 to the 2006 Consolidated HMS FMP (81 FR 62100, September 8, 2016). NOAA Fisheries completed the HMS EFH 5-Year Review in 2015 to investigate additional impacts of HMS fishing gears on HMS EFH since Amendment 1. NOAA Fisheries did not find any significant changes in effects to HMS EFH from HMS and non-HMS fishing gear types. NOAA Fisheries found no new information that any authorized HMS gear would have adverse effects on EFH. The Final Amendment 10 was published on September 7, 2017 (82 FR 42329). The proposed rule measures in this action are not expected to change the fishing gear types authorized relative to the status quo. Therefore, the proposed action in the context of the fishery as a whole will not have an adverse impact on EFH and an EFH consultation is not required.

NOAA Fisheries recently initiated an HMS EFH 5-year review to gather all new information and determine whether modifications to existing EFH descriptions and designations are warranted. If EFH modifications are warranted, a follow up action may be initiated to implement the recommended updates to HMS EFH. The draft HMS EFH 5-Year Review is expected to be completed in 2023.

4.4 Comparison of NEPA Alternatives

Table 4.1 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 4.1–4.6.

Table 4.1 Comparison of Alternatives Considered

Alternative	Ecological	Socioeconomic
Alternative A1	Minor Adverse	Neutral
Alternative A2 (Preferred Alternative)	Minor Beneficial	Neutral to Minor Adverse
Alternative B1	Minor Adverse	Neutral
Alternative B2	Neutral to Minor Beneficial	Neutral to Minor Adverse
Alternative B3	Neutral to Minor Beneficial	Neutral to Minor Adverse
Alternative B4 (Preferred Alternative)	Minor Beneficial	Neutral to Minor Adverse
Alternative B5	Minor Beneficial	Neutral to Minor Adverse

4.5 Cumulative Impacts

A cumulative impact is an impact on the environment that results from the incremental impact of the final action 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 minor beneficial cumulative ecological impacts for both oceanic whitetip and LCS hammerhead shark stocks, through the promotion of conservation and recovery of these species. These actions are especially important, considering past determinations of sustainability concerns for smooth and scalloped hammerhead sharks, and moderately high to high levels of overexploitation risk for oceanic whitetip sharks.

In recent years, oceanic whitetip sharks have not been targeted in commercial or recreational fisheries, and landings of this species have decreased, contributing little to overall shark fishery revenues. Additionally, average annual gross revenues for hammerhead sharks in the U.S. Atlantic Ocean and Gulf of Mexico from 2017 through 2021 represent less than 2 percent of annual shark fishery revenues. Therefore, the added restrictions of the proposed actions may

result in only minor adverse economic impacts. The preferred alternatives would likely have no impact on the overall fishing effort or fishing rates, bycatch, or bycatch rates in the long term beyond what was previously analyzed in Amendments 4, 8, and 9 to the 2006 Consolidated HMS FMP. Minimal impacts to protected species and marine mammals and EFH would be expected as a result of these alternatives. The preferred alternatives would support sustainable shark fisheries and maintain the status quo for species currently under a rebuilding timeframe.

In response to the listing of oceanic whitetip shark as a threatened species under the ESA, NOAA Fisheries is currently accepting comments on a Draft Recovery Plan to identify and guide recovery needs for oceanic whitetip sharks. The recovery plan includes a description of site-specific management actions necessary to conserve the species; objective, measurable criteria that, when met, will allow the species to be removed from the endangered and threatened species list; and estimates of the time and funding required to achieve the plan's goals. The Draft Recovery Plan includes several recommendations to reduce fishery interactions, including the potential use of time-area closures, deterrent methods, research on best methods to increase at-vessel and post-release survivorship (e.g., gear configurations), and development and implementation of species and gear specific safe handling and release guides.

A bill was recently signed into law that will likely change NOAA Fisheries strategies for oceanic whitetip shark recovery and, more broadly, shark fisheries management. The "James M. Inhofe National Defense Authorization Act for Fiscal Year 2023" (H.R. 7776, signed on December 23, 2022) includes a prohibition on the sale of shark fins, which makes it illegal to possess, acquire, receive, transport, offer for sale, sell, or purchase a shark fin or any byproduct containing shark fins (with certain exceptions). NOAA Fisheries is currently reviewing the new legislation to determine next steps.

Scalloped hammerhead sharks were last assessed in 2009 and determined to be overfished and overfishing is occurring. As a result, a rebuilding plan was established for 2013 through 2023. Since the last stock assessment, SEDAR has updated their approach to assessing stocks, now utilizing research track assessments to better incorporate recent information into existing assessments. Although the results from research track assessments cannot be directly used for stock/species management (due to the time intensive nature of the assessment and availability of the most recent data), SEDAR is now using "operational" assessments that will allow updated data to be used in established research tracks for more timely and accurate results. The first Atlantic HMS stocks to be assessed using this approach is the hammerhead shark complex; the assessment is underway.

NOAA Fisheries recently finalized Amendment 14 to the 2006 Consolidated HMS FMP (88 FR 4157, January 24, 2023) with a draft amendment released in 2020 (85 FR 60132, September 24, 2020; Supplement to Draft Amendment 14: 87 FR 3504, January 24, 2022). This amendment established a new framework for the establishment of acceptable biological catch and annual catch limits for most Atlantic shark fisheries. Amendment 14 does not contain a proposed or final rule, regulatory text, or change any fishery quotas. Amendment 14 and any resulting rulemakings applying its provisions would not impact oceanic whitetip sharks once they are added to the prohibited shark species group. However, a follow-on rulemaking implementing Amendment 14 would impact management measures for hammerhead shark species. Any

rulemakings applying the provisions of Amendment 14 would be finalized after this rulemaking and would consider the cumulative impacts from this action.

The recovery plan for oceanic whitetip sharks and the updated stock assessment for hammerhead sharks may result in management decisions that may include more restrictive measures than the proposed actions, and have impacts on the overall shark fishery. Until the finalization of these actions, further speculation of these impacts is not possible. NOAA Fisheries is not aware of any other reasonable foreseeable future actions that would impact the shark fisheries or have impacts in the areas affected by this rule.

4.6 Protected Resources

The preferred alternatives considered in this action are likely to have neutral impacts on protected resources, including sea turtles, marine mammals, or sharks listed under the ESA or marine mammals protected by the MMPA. The purpose of the preferred alternatives are to prohibit the commercial and recreational retention of oceanic whitetip and scalloped hammerhead sharks, which both have been listed as “threatened” under the ESA. Although these species are not presently in danger of extinction throughout all or a significant portion of their respective ranges, they are likely to become so in the foreseeable future (i.e., approximately 30 years). Prohibiting retention of these federally protected species will mitigate the fishing pressure and related mortality that had fueled abundance declines and reduce the likelihood of future extinction. The gear types affected by this action are all tended gears with a low potential to harm protected resources. Gears authorized for use in the recreational and commercial shark fisheries include handline, rod and reel, BLL, PLL, bandit gear, and gillnets. However, PLL gear is currently prohibited for use when fishing for oceanic whitetip and hammerhead sharks. Protected resources such as sea turtles, marine mammals, or sharks listed under the ESA or marine mammals protected by the MMPA have a low likelihood of interacting with these gear types. 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.

4.7 Environmental Justice Concerns

Executive Order 12898 requires agencies to identify and address disproportionately high and adverse environmental effects of its regulations on minority and low-income populations. To determine whether environmental justice concerns exist, the demographics of the affected geographic area should be examined to ascertain whether minority populations and low-income populations are present. If so, a determination must be made as to whether implementation of the alternatives may cause disproportionately high and adverse human health or environmental effects on these populations.

Community profile information is available in the 2006 Consolidated HMS FMP (Chapter 9); a report by MRAG, Americas, Inc., and Jepson (2008) titled “Updated Profiles for HMS Dependent Fishing Communities” (Appendix E of Action 2 to the 2006 Consolidated Atlantic HMS FMP); and the 2015 HMS SAFE Report (NMFS 2015). The 2015 HMS SAFE Report and

the “Updated Profiles for HMS Dependent Fishing Communities” social impact assessment (MRAG et al. 2008) updated community profiles presented in the 2006 Consolidated HMS FMP, and provided new social impact assessments for HMS fishing communities along the Atlantic and Gulf of Mexico coasts. The 2011 and 2012 HMS SAFE Reports (NMFS 2011; NMFS 2012) include updated census data for all coastal Atlantic states, and some selected communities that are known centers of HMS fishing, processing, or dealer activity. Demographic data indicate that coastal counties with fishing communities are variable in terms of social indicators like income, employment, and race and ethnic composition.

The preferred alternative for hammerhead sharks will prohibit the commercial and recreational retention of LCS hammerhead sharks in the U.S. Caribbean region. This alternative selectively targets the U.S. Caribbean region due to the presence of the Central and Southwest Atlantic DPS of scalloped hammerhead sharks. In the U.S. Caribbean region, there are demographic differences in comparison to the continental United States. In Puerto Rico, 98.9 percent of residents identify as Hispanic or Latino and 43.5 percent of the Hispanic and Latino population lives below the poverty line.

Although the preferred alternative for hammerhead sharks may have adverse economic impacts on commercial and recreational fishermen in the U.S. Caribbean region, due to few interactions with LCS hammerhead sharks, the impacts are expected to be minimal. Further, fishing is not a prominent economic activity in Puerto Rico, and variations in fishing income have little impact on the island’s economy (NMFS 2011). Census Bureau estimates from 2017 through 2021 indicate that 0.8 percent of the population works in agriculture, forestry, fishing and hunting, and mining. Artisanal fishing communities are found throughout the island. These communities are extremely poor and will likely be the communities most affected by changes in regulations (NMFS 2011).

The preferred alternatives for oceanic whitetip shark and hammerhead sharks were selected to minimize ecological and economic impacts and provide for the sustained participation of fishing communities. The preferred alternatives for oceanic whitetip shark and hammerhead sharks would not have any effects on human health nor are they expected to have any disproportionate social effect on minority and low-income communities. The preferred alternative for hammerhead sharks is expected to have minor adverse economic impacts which are disproportionate for minority and low-income communities in the U.S. Caribbean region; however, this is because the Central and Southwest Atlantic DPS of scalloped hammerhead sharks only occur in U.S. waters of the Caribbean Sea and not in the Gulf of Mexico or Atlantic Ocean. This alternative was selected to minimize impacts and meet the conservation recommendations outlined in the 2020 BiOps.

4.8 Coastal Zone Management Act

The Coastal Zone Management Act (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. Overall, this action explores alternatives that would prohibit the commercial and recreational retention of oceanic whitetip sharks throughout U.S. waters in the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea by adding oceanic whitetip

sharks to the prohibited shark species group. Additionally, this action would prohibit the commercial and recreational retention of LCS hammerhead sharks within the U.S. Caribbean region. The goal of the proposed rule is to reduce mortality of oceanic whitetip and scalloped hammerhead sharks which are listed as threatened under the ESA. This effort would promote conservation and recovery of these threatened species. NOAA Fisheries 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. NOAA Fisheries is seeking concurrence with respect to the preferred alternatives and will ask for states' agreement with this determination during the proposed rule stage.

4.9 References

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5.0 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 environment associated with their actions. As described in the CEQ regulations, agencies can use mitigation to reduce environmental impact in several ways. Mitigation 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 by 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. NOAA Fisheries 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.

Preferred Alternative A2 would add oceanic whitetip sharks to the prohibited shark species group (Table 1 of Appendix A to 50 CFR Part 635) to prohibit commercial and recreational retention of oceanic whitetip sharks in U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea. This action would likely result in minor to no adverse socioeconomic impacts as most HMS commercial and recreational fisheries rarely encounter, land, or sell oceanic whitetip sharks. Oceanic whitetip sharks are rarely a targeted species and are worth less than other more valuable target species. In addition, oceanic whitetip shark measures are unlikely to affect total effort, and businesses that support commercial fishing such as dealers, processors, and bait and tackle supplies are unlikely to be affected. Additionally, the preferred alternative would result in beneficial ecological impacts.

Preferred Alternative B4 would prohibit the commercial and recreational retention of all LCS hammerhead sharks only in the U.S. Caribbean region. Both 2020 BiOps state conservation recommendations for the scalloped hammerhead shark Central and Southwest Atlantic DPS, which includes the Caribbean Sea within its boundaries. Due to potential identification issues, scalloped hammerhead sharks could be mistaken for smooth or great hammerhead sharks, resulting in the continued retention of scalloped hammerhead sharks. Given this potential issue, prohibition of all three species would ensure the protection of scalloped hammerhead sharks. Currently, commercial permit holders issued a Shark Directed or Incidental LAP and an HMS Charter/Headboat permit with a commercial sale endorsement using other authorized gear (excluding PLL gear) that do not target tunas, swordfish, and/or billfish (e.g., BLL gear, gillnet, rod and reel, handline, and bandit gear) can still be authorized to fish for, retain, possess, land, sell, or purchase hammerhead sharks subject to existing commercial regulations. HMS recreational permit holders are still authorized to fish for, retain, and land hammerhead sharks when not retaining tunas, swordfish, and/or billfish. Therefore, prohibiting the retention of all LCS hammerhead sharks in the U.S. Caribbean region would likely result in minor adverse

socioeconomic impacts due to the potential loss of revenue from LCS hammerhead sharks. These alternatives as a whole would likely have beneficial ecological impacts and neutral to minor adverse socioeconomic effects. As such, the proposed actions in this EA are not anticipated to have unavoidable adverse impacts which would require mitigation.

5.1 Unavoidable Adverse Impacts

In general, there are no unavoidable adverse ecological impacts expected as a result of the preferred alternatives. NOAA Fisheries does not expect a change in current fishing practices or an increase in fishing effort due to the prohibition of these 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 other shark species subject to current regulations. Thus, the proposed measures 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 preferred alternatives.

6.0 REGULATORY IMPACT REVIEW

NOAA Fisheries 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 Office of Management and Budget review of 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 of 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 mandates, 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. Chapters 3 and 6 provide additional information related to the economic impacts of the alternative suites.

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 6.4.

Table 6.1 Net Economic Benefits and Costs of Alternatives

Alternatives	Economic Benefits	Economic Costs
Alternative A1: No action for oceanic whitetip sharks.	This alternative would have neutral economic benefits since fishermen could continue to catch and retain oceanic whitetip sharks at a similar level and rate as the status quo.	None.
Alternative A2: Prohibit the commercial and recreational retention of all oceanic whitetip sharks. (Preferred Alternative)	There would be unquantified benefits to the public associated with reducing mortality resulting from prohibiting retention of oceanic whitetip sharks by the commercial and recreational fleet. These benefits include passive use values, such as shark viewing trips, and nonuse values including knowing that shark species remain for future generations (bequest value) and values placed on knowing shark species will continue to survive (existence value). In addition, in the long term, a rebuilt oceanic whitetip shark stock could provide better harvest opportunities for the commercial fishing sector.	Fisheries would no longer generate revenue from the sale of oceanic whitetip sharks and could limit fishing opportunities for charter/headboat operators resulting in fewer fishing trips. Additionally, recreational fishermen could spend more time, effort, and fuel avoiding interactions with oceanic whitetip sharks, therefore increasing the cost of their trips.
Alternative B1: No action for hammerhead sharks.	This alternative would have neutral economic benefits since fishermen could continue to catch and retain hammerhead sharks at a similar level and rate as the status quo.	None.
Alternative B2: Prohibit the commercial and recreational retention of scalloped hammerhead sharks in the U.S. Caribbean region.	There would be unquantified benefits to the public associated with reducing mortality resulting from prohibiting retention of scalloped hammerhead sharks by the commercial and recreational fleet in the U.S. Caribbean region. These benefits include passive use values, such as shark viewing trips, nonuse values including knowing that shark species remain for future generations (bequest value), and values placed on knowing shark species will continue to survive (existence value). In addition, in the long term, a rebuilt scalloped hammerhead shark stock could provide better harvest opportunities for the commercial fishing sector.	Fisheries would no longer be able to generate revenue on sales of scalloped hammerhead sharks in the U.S. Caribbean region (there were no reported landings from 2017 through 2021). This could limit fishing opportunities for charter/headboat operators resulting in fewer fishing trips in the U.S. Caribbean region. Additionally, recreational fishermen could spend more time, effort, and fuel avoiding interactions with scalloped hammerhead sharks, therefore increasing the cost of their trips.
Alternative B3: Prohibit the commercial and recreational retention	There would be unquantified benefits to the public associated with reducing mortality resulting from prohibiting retention of scalloped hammerhead sharks by the commercial and recreational fleet in all regions. These benefits include passive use values, such as shark	Fisheries would no longer be able to generate revenue on sales of scalloped hammerhead sharks in the Atlantic, Gulf of Mexico, and the Caribbean which on average from 2017 through 2021 was \$10,753 per year combined in the Atlantic and Gulf of

of scalloped hammerhead sharks in all regions.	viewing trips, nonuse values including knowing that shark species remain for future generations (bequest value), and values placed on knowing shark species will continue to survive (existence value). In addition, in the long term, a rebuilt scalloped hammerhead shark stock could provide better harvest opportunities for the commercial fishing sector.	Mexico. This could limit fishing opportunities for charter/headboat operators resulting in fewer fishing trips in all regions. Additionally, recreational fishermen could spend more time, effort, and fuel avoiding interactions with scalloped hammerhead sharks, therefore increasing the cost of their trips.
Alternative B4: Prohibit the commercial and recreational retention of all LCS hammerhead sharks in the U.S. Caribbean region. (Preferred Alternative)	There would be unquantified benefits to the public associated with reducing mortality resulting from prohibiting retention of all LCS hammerhead sharks by the commercial and recreational fleet in the U.S. Caribbean region. These benefits include passive use values, such as shark viewing trips, nonuse values including knowing that shark species remain for future generations (bequest value), and values placed on knowing shark species will continue to survive (existence value). In addition, in the long term, a rebuilt LCS hammerhead shark stock could provide better harvest opportunities for the commercial fishing sector.	Fisheries would no longer be able to generate revenue on sales of any hammerhead sharks in the U.S. Caribbean region. This could limit fishing opportunities for charter/headboat operators resulting in fewer fishing trips in the U.S. Caribbean region. Additionally, recreational fishermen could spend more time, effort, and fuel avoiding interactions with all LCS hammerhead sharks, therefore increasing the cost of their trips.
Alternative B5: Prohibit the commercial and recreational retention of all LCS hammerhead sharks in all regions.	There would be unquantified benefits to the public associated with reducing mortality resulting from prohibiting retention of all LCS hammerhead sharks by the commercial and recreational fleet in all regions. These benefits include passive use values, such as shark viewing trips, nonuse values including knowing that shark species remain for future generations (bequest value), and values placed on knowing shark species will continue to survive (existence value). In addition, in the long term, a rebuilt LCS hammerhead shark stock could provide better harvest opportunities for the commercial fishing sector.	Fisheries would no longer be able to generate revenue on sales of all LCS hammerhead sharks in the Atlantic, Gulf of Mexico, and the Caribbean which on average from 2017 through 2021 was \$42,794 per year combined in the Atlantic and Gulf of Mexico. This could limit fishing opportunities for charter/headboat operators resulting in fewer fishing trips in all regions. Additionally, recreational fishermen could spend more time, effort, and fuel avoiding interactions with all LCS hammerhead sharks, therefore increasing the cost of their trips.

7.0 INITIAL REGULATORY FLEXIBILITY ANALYSIS

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 implement the conservation recommendations from the two 2020 BiOps for the Atlantic HMS PLL fishery and non-PLL fisheries for oceanic whitetip sharks and the Central and Southwest Atlantic DPS of scalloped hammerhead sharks. 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, NOAA Fisheries may establish size standards that differ from those established by the SBA Office of Size Standards, but only for use by NOAA Fisheries 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, NOAA Fisheries must publish such size standards in the *Federal Register*, which NOAA Fisheries did on December 29, 2015 (80 FR 81194). In that final rule, effective on July 1, 2016, NOAA Fisheries 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. NOAA Fisheries 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 206 Shark Directed permit holders, 241 Shark Incidental permit holders, 76 HMS Commercial Caribbean Small Boat permit holders, 4,175 charter/headboat permit holders, 23,607 Angling permit holders, and 603 Atlantic Tunas General category and Swordfish General Commercial permit holders. The HMS charter/headboat permit holders have 2,994 shark endorsements and 1,873 commercial sale endorsements; the HMS Angling permit holders have 12,978 shark endorsements; and the Atlantic Tunas General category and Swordfish General Commercial permit holders have 388 shark endorsements. NOAA Fisheries has determined that the proposed rule would not likely affect any small governmental jurisdictions. In the U.S. Caribbean specifically this rule would apply to 27 Commercial Caribbean Small Boat permit holders, 49 charter/headboat permit holders, 12 Swordfish General Commercial permit holders, and 93 Atlantic Tunas General category permit holders. 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 add oceanic whitetip sharks to the prohibited shark species group to prohibit the commercial and recreational retention of oceanic whitetip sharks for all HMS permit holders in U.S. Atlantic waters including the Gulf of Mexico and Caribbean region, and prohibit the commercial and recreational retention of hammerhead sharks in the U.S. Caribbean region for all HMS permit holders.

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). NOAA Fisheries examined each of these categories of alternatives. Regarding the first, second, and fourth categories, NOAA Fisheries 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. NOAA Fisheries 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, NOAA Fisheries 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 Oceanic Whitetip Alternatives

Alternative A1, the No Action alternative, would continue to allow commercial permit holders issued a Shark Directed or Incidental LAP using authorized gear (excluding PLL gear) and/or HMS Charter/Headboat permit with a commercial sale endorsement the opportunity to land and sell oceanic whitetip sharks when tuna or tuna-like species are not retained, possessed, on board, or offloaded from, the vessel on the same trip. This alternative would not result in any additional economic impacts, and would have neutral economic impacts on HMS permit holders.

Alternative A2, the preferred alternative, would add oceanic whitetip sharks to the prohibited shark species group to prohibit the commercial and recreational retention of oceanic whitetip sharks for commercial and recreational shark fisheries throughout U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea. This alternative would be consistent with the conservation recommendations from both of the 2020 BiOps. From 2017 through 2021, there have been few instances of oceanic whitetip sharks being retained in HMS commercial or

recreational shark fisheries in U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea (see Chapter 3, Tables 3.4 through 3.6). This alternative could limit fishing opportunities and lead to fewer fishing trips for charter/headboat operators. However, oceanic whitetip sharks are rarely a target species and are worth less than other more valuable target species. Overall, this alternative would have minor adverse socioeconomic impacts on HMS permit holders.

7.6.2 Hammerhead Alternatives

Under Alternative B1, the No Action alternative, retention of scalloped hammerhead sharks on vessels targeting tunas, swordfish, and/or billfish with PLL gear onboard would continue to be prohibited. Commercial permit holders issued a Shark Directed or Incidental LAP and/or HMS Charter/Headboat permit with a commercial sale endorsement using other authorized gear that do not target tuna and tuna-like species (e.g., BLL, gillnet, rod and reel, handline, and bandit gear) would still be authorized to fish for, and land scalloped hammerhead sharks subject to existing commercial regulations. This alternative would not result in any change in fishing effort, and would have neutral economic impacts on HMS permit holders.

Under Alternative B2, NOAA Fisheries would prohibit the commercial and recreational retention of scalloped hammerhead sharks for shark commercial and recreational permit holders fishing within the U.S. Caribbean region. This alternative would be consistent with the conservation recommendations from both the 2020 BiOps. Between 2017 and 2021, there were no reported commercial landings of scalloped hammerhead sharks in the U.S. Caribbean region and, therefore, it is unlikely revenue would be lost from prohibiting retention of this species. There could also be some minor costs associated with discarding or avoiding scalloped hammerhead sharks within that region. However, this alternative could limit fishing opportunities and lead to fewer fishing trips for charter/headboat operators. This alternative would have neutral to minor adverse economic impacts on the small entities participating in the fishery.

Under Alternative B3, NOAA Fisheries would prohibit the commercial and recreational retention of scalloped hammerhead sharks for commercial and recreational permit holders fishing within U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea. This alternative would be consistent with the conservation recommendations from both of the 2020 BiOps. On average from 2017 through 2021 scalloped hammerhead sharks contributed \$10,753 of revenue in the Atlantic and Gulf of Mexico shark fisheries combined. This equates to less than one percent of the total revenue from all shark fisheries. There could also be some minor costs associated with discarding or avoiding scalloped hammerhead sharks. Additionally this alternative could limit fishing opportunities and lead to fewer fishing trips for charter/headboat operators and therefore, this alternative would have minor adverse economic impacts on these small entities participating in the fishery.

Under Alternative B4, the preferred alternative, NOAA Fisheries would prohibit the commercial and recreational retention of all LCS hammerhead sharks for commercial and recreational permit holders fishing within the U.S. Caribbean region. This alternative would be consistent with the conservation recommendations from both of the 2020 BiOps. Between 2017 and 2021, there were no reported commercial landings of hammerhead sharks in the U.S. Caribbean region and

therefore it is unlikely revenue would be lost from prohibiting these species. There could also be some minor costs associated with discarding or avoiding hammerhead sharks within the region. This alternative could limit fishing opportunities and lead to fewer fishing trips for charter/headboat operators targeting hammerhead sharks. NOAA Fisheries prefers Alternative B4 at this time, because it would implement the 2020 BiOps' conservation recommendations and provide the most robust protections for scalloped hammerhead sharks, while not limiting fishing for hammerhead sharks in the Gulf of Mexico and Atlantic Ocean. This alternative would have minor adverse economic impacts on these small entities participating in the fishery.

Under Alternative B5, NOAA Fisheries would prohibit the commercial and recreational retention of all LCS hammerhead sharks for commercial and recreational permit holders fishing within U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea. This alternative would be consistent with the conservation recommendations from both the 2020 BiOps. On average from 2017 through 2021, LCS hammerhead sharks contributed \$42,794 of revenue in the Atlantic and Gulf of Mexico shark fisheries combined. This equates to less than 2 percent of the total revenue from all shark fisheries. There could also be some minor costs associated with discarding or avoiding hammerhead sharks. Additionally, this alternative could limit fishing opportunities and lead to fewer fishing trips for charter/headboat operators and therefore, this alternative would have minor adverse economic impacts on these small entities participating in the fishery.

8.0 APPLICABLE LAWS

8.1 Magnuson-Stevens Fishery Conservation and Management Act

NOAA Fisheries 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), subject to further consideration after public comment.

NS1 requires NOAA Fisheries 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, NOAA Fisheries has undertaken numerous management actions to address overfishing and rebuild shark stocks, including the 2006 Consolidated HMS FMP and the following amendments to the 2006 Consolidated 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 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 address stock health by reducing fishing pressure on oceanic whitetip sharks in the U.S. Atlantic Ocean (including the Gulf of Mexico and Caribbean Sea) and LCS hammerhead sharks in the U.S. Caribbean region.

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 status information, and the data used for the analysis in the document consists of several up-to-date data sources including logbooks, observer reports, fisher-independent surveys, Large Pelagics Survey estimates, and electronic dealer reports from the last five 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 this action are designed to comply with the 2020 BiOps' conservation recommendations for oceanic whitetip and scalloped hammerhead sharks. The preferred alternative for oceanic whitetip sharks prohibits all commercial and recreational retention in the entire U.S. Atlantic EEZ, including the Gulf of Mexico and Caribbean Sea, thereby applying the same management measure to the entire U.S. managed stock. The preferred alternative for hammerhead sharks applies only to the U.S. Caribbean EEZ in order to apply measures in U.S. waters that fall within the boundaries of the Central and Southwest Atlantic DPS of scalloped hammerhead sharks. The LCS hammerhead shark prohibition on retention in the U.S. Caribbean EEZ would be consistent with the 2020 BiOps' conservation recommendations for the scalloped hammerhead sharks Central and Southwest Atlantic DPS.

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 this action are designed to comply with the 2020 BiOps' conservation recommendations for oceanic whitetip and scalloped hammerhead sharks. The preferred alternative for oceanic whitetip sharks would add the species to the prohibited shark species group and applies to permit holders across the entire U.S. Atlantic EEZ, including the Gulf of Mexico and Caribbean region. The preferred alternative for LCS hammerhead sharks only applies to permit holders in the U.S. Caribbean EEZ, which are the only U.S. waters within Central and Southwest Atlantic DPS for scalloped hammerhead sharks and thus where the action must be taken. The LCS hammerhead shark prohibition on retention in the U.S. Caribbean EEZ would be consistent with the 2020 BiOps conservation recommendation for scalloped hammerhead sharks Central and Southwest Atlantic DPS. The preferred alternatives do not allocate or assign fishing privileges.

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 is to reduce fishing mortality of oceanic whitetip and scalloped hammerhead sharks, there would be some loss in efficiency in both the shark commercial and recreational fisheries. Preferred Alternative A2 would add oceanic whitetip sharks to the prohibited shark species group to prohibit the commercial and recreational retention of oceanic whitetip sharks throughout U.S. waters of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea. This measure would reduce landings for some commercial and recreational fishermen that catch oceanic whitetip sharks. However, this alternative may assist with rebuilding the stock to healthy levels in the long term, as they are threatened throughout their range. Preferred Alternative B4 would prohibit the commercial and recreational retention of LCS hammerhead sharks in the U.S. Caribbean EEZ. While this measure would reduce landings for commercial and recreational fishermen that catch hammerhead sharks in the Caribbean EEZ, it minimizes the impact by continuing to allow retention of hammerhead sharks in the U.S. Atlantic and Gulf of Mexico waters. As demonstrated in the EA, neither of the preferred alternatives focus solely on economic allocation. Both preferred alternatives are consistent with the conservation recommendations in the 2020 BiOps and are expected to have minor beneficial ecological impacts, minor beneficial impacts on protected resources, and neutral to minor adverse 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. Preferred Alternative A2 would add oceanic whitetip sharks to the prohibited shark species group to prohibit the commercial and recreational retention of oceanic whitetip sharks throughout U.S. waters of the Atlantic Ocean,

including the Gulf of Mexico and Caribbean Sea. Oceanic whitetip sharks are rarely targeted and landed by commercial and recreational fishermen affording additional protection of the stock. Preferred Alternative B4 would prohibit retention of LCS hammerhead sharks in the U.S. Caribbean EEZ, and considers variations in catch by continuing to allow the retention of LCS hammerhead sharks in some instances.

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 meeting required conservation goals. 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 oceanic whitetip and hammerhead 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. While the socioeconomic impacts of the preferred alternatives on fishing communities are expected to be neutral to minor adverse (as described in Chapters 4, 6, and 7), these impacts were minimized to the extent practicable through the selection of the preferred alternatives.

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 are not expected to cause significant changes in fishing effort, areas, or practices, and thus are not expected to lead to increases in potential bycatch or increased interactions with non-target, 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 E.O. 13132: Federalism

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

9.0 LIST OF AGENCIES AND PERSONS CONSULTED

This EA, Regulatory Impact Review, and IRFA were prepared by Becky Curtis, Ann Williamson, Derek Kraft, Larry Redd, Delisse Ortiz, Benjamin Duffin, Cliff Hutt, Sarah McLaughlin, George Silva, Karyl Brewster-Geisz, and Randy Blankinship, from the Atlantic HMS Management Division, Office of Sustainable Fisheries. Please contact the Atlantic HMS Management Division for a complete copy of current regulations for the Atlantic HMS commercial and recreational fisheries.

Atlantic Highly Migratory Species Management Division
NMFS SSMC3 F/SF1
1315 East-West Highway
Silver Spring MD, 20910
Phone: (301) 427-8503