DRAFT ENVIRONMENTAL ASSESSMENT
FOR THE
PROPOSED ENDANGERED SPECIES ACT 4(D) REGULATIONS FOR THE THREATENED OCEANIC WHITETIP SHARK (*CARCHARHINUS LONGIMANUS*)

PREPARED BY:

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EXECUTIVE SUMMARY

This draft environmental assessment (EA) evaluates the potential environmental effects that may result from implementing protective regulations under the U.S. Endangered Species Act (ESA; 16 U.S.C. §§1531-1544) for the threatened oceanic whitetip shark (*Carcharhinus longimanus*). The National Marine Fisheries Service (NMFS) published a final rule listing the species as threatened under the ESA on January 30, 2018, which became effective on March 1, 2018 (83 FR 4153). Several threats to the species were identified, including incidental bycatch in commercial fisheries (particularly pelagic longlines (PLL), purse seines, and gillnets), international trade of oceanic whitetip shark fins, and inadequate regulatory mechanisms (management) to address these threats. There are several other stressors that are of lesser concern but may work synergistically to negatively affect the population viability of oceanic whitetip sharks (e.g., effects of climate change, pollutants, and recreational fisheries). Unless these threats are addressed, the oceanic whitetip shark is likely to continue to decline in abundance, resulting in an increased risk of extinction.

Section 4(d) of the ESA authorizes NMFS to issue regulations deemed necessary and advisable to provide for the conservation of threatened species. Further, pursuant to Section 4(d), NMFS may apply by regulation any or all of the prohibitions listed under Section 9(a)(1) of the ESA to the oceanic whitetip shark.

NMFS considered and evaluated three alternatives for this action:

> *Alternative 1, No-action Alternative*: The No-action Alternative represents the environmental baseline against which the other alternatives are compared to determine their environmental effects. If implemented, the No-action Alternative would not apply any of the prohibitions under Section 9 of the ESA to the oceanic whitetip shark or apply any other regulations for the conservation of the species.
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> *Alternative 2, Proposed Action*: Under Alternative 2, all of the prohibitions under Section 9(a)(1) of the ESA would be applied to the oceanic whitetip shark, with limited exceptions (in addition to those prescribed by Sections 7 and 10 of the ESA) for specified categories of activities that contribute to the conservation of the species. As such, it would be unlawful to do any of the following with respect to the oceanic whitetip shark: (A) import the species into, or export the species from, the United States; (B) take the species within the United States or the territorial sea of the United States; (C) take the species upon the high seas; (D) possess, sell, deliver, carry, transport, or ship, by any means whatsoever, the species taken in violation of subparagraphs (B) and (C); (E) deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of a commercial activity, the species; (F) sell or offer for sale in interstate or foreign commerce the species; or (G) violate any regulation pertaining to the species promulgated by the Secretary. The additional specified exceptions include take resulting from scientific research activities that advance the conservation and/or recovery of the species, import and export of scientific samples and specimens, and take resulting from certain emergency response or salvage activities carried out by authorized law enforcement officials or management authorities.

Alternative 3: Under Alternative 3, all of the prohibitions under Section 9(a)(1) of the ESA would be applied to the oceanic whitetip shark, without the exceptions included in Alternative 2.

The alternatives would apply to areas where oceanic whitetip sharks are known to occur within marine waters of the United States, U.S. territorial waters, and on the high seas. The species occurs circumglobally; however, the alternatives presented above only apply to persons under the jurisdiction of the United States.

NMFS is able to identify some of the categories of activities that affect the oceanic whitetip shark within U.S. jurisdiction. The No-action Alternative would not provide any additional protection for the oceanic whitetip shark, but the other two alternatives would provide protection for the species. Alternative 2 would apply all prohibited acts under Section 9(a)(1) to oceanic whitetip sharks, with certain exceptions. Alternative 3 would apply all prohibited acts under Section 9(a)(1) to oceanic whitetip sharks, without these exceptions. Alternative 2 is preferred over Alternative 3 because the former would prohibit activities that are known to contribute to the extinction risk of the species (e.g., take) while allowing for activities that contribute to the conservation of the oceanic whitetip shark. Thus, Alternative 2 is currently the preferred alternative because it indicates that it would provide a high degree of protection for oceanic whitetip sharks while avoiding significant adverse effects on some of the affected entities (e.g., researchers and law enforcement authorities).

The preferred alternative (Alternative 2) would be expected to result in the following effects:

- Prohibit take of the oceanic whitetip shark, except in specified scientific research or law enforcement circumstances.

- Prohibit the import and export of oceanic whitetip sharks (and parts and specimens thereof) into and from the United States and its territories, except in specified scientific research circumstances.

- Reinforce existing prohibitions on trade in oceanic whitetip shark fins.

- Limit adverse effects of actions funded, authorized, or carried out by federal agencies on the species through issuance of reasonable and prudent measures as necessary or appropriate.

- Support research that improves understanding of the status and risks facing the oceanic whitetip shark and provide critical information for assessing the effectiveness of current and future management practices.

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ACRONYMS and GLOSSARY

CEQ - Council on Environmental Quality
CFR - Code of Federal Regulations
CITES - Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMP - Coastal Migratory Pelagic
EA - Environmental Assessment
EPO - Eastern Pacific Ocean
ERA - Extinction Risk Analysis
ESA - Endangered Species Act
FRN - Federal Register Notice
FR - *Federal Register*
HMS - Highly Migratory Species
IATTC - Inter-American Tropical Tuna Commission
ICCAT - International Commission for the Conservation of Atlantic Tunas
IRFA - Initial Regulatory Flexibility Act Analysis
ITP - Incidental Take Permit
ITS - Incidental Take Statement
IUCN - International Union for Conservation of Nature
NAICS - North American Industry Classification System
NEPA - National Environmental Policy Act
NMFS - National Marine Fisheries Service
NOAA - National Oceanic and Atmospheric Administration
PIRO - Pacific Islands Regional Office
PLL - Pelagic Longline
RFA - Regulatory Flexibility Act
RFMO - Regional Fishery Management Organization
RPAs - Reasonable and Prudent Alternatives
RPMs - Reasonable and Prudent Measures and Terms and Conditions
U.S.C. - U.S. Code
WCPFC - Western and Central Pacific Fisheries Commission
WCPO - Western and Central Pacific Ocean

Conservation (conserve, conserving) - to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to the ESA are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such

as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking (16 U.S.C. § 1532 (3)).

Cumulative effects - the effects on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR § 1508.1(g)(3)).

Effects or impacts - changes to the human environment from the proposed action or alternatives that are reasonably foreseeable and include direct effects, indirect effects, cumulative effects, and ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health and include beneficial effects. (40 CFR § 1508.1(g)).

Endangered species - any species which is in danger of extinction throughout all or a significant portion of its range (16 U.S.C. § 1532 (3)).

Harass –create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns, which include, but are not limited to, breeding, feeding, or sheltering (50 CFR § 17.3; NOAA Fisheries Policy Directive 02-110-19).

Harm – an act which actually kills or injures fish or wildlife, such as significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR § 222.102).

Human environment – means comprehensively the natural and physical environment and the relationship of present and future generations of Americans with that environment (40 CFR § 1508.1(m)).

Jeopardize the continued existence of – to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of the listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR § 402.02).

Listed species - any species of fish, wildlife, or plant which has been determined to be endangered or threatened under Section 4 of the federal ESA (50 CFR § 402.02).

Species – includes any subspecies of fish or wildlife or plants, and any distinct population segment of any species or vertebrate fish or wildlife which interbreeds when mature (16 U.S.C. § 1532 (16)).

Take – to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct (16 U.S.C. § 1532 (19)).

Threatened species - any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range (16 U.S.C. § 1532 (20)).

1.0 INTRODUCTION

In this environmental assessment (EA), the National Marine Fisheries Service (NMFS) evaluated the potential environmental effects of issuing regulations under Section 4(d) of the Endangered Species Act (ESA; 16 U.S.C. §§ 1531-1544) for the conservation of the threatened oceanic whitetip shark (*Carcharhinus longimanus*). NMFS analyzed the potential environmental effects of the proposed protective regulations, or ESA Section 4(d) rule, and two alternatives. This EA was prepared according to the Council on Environmental Quality's (CEQ) regulations (40 CFR Parts 1500 to 1508[1]), and NOAA policy and procedures[2] for implementing the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*).

1.1 Background

The oceanic whitetip shark is a large, pelagic apex predatory shark found in tropical and subtropical waters around the globe between 30º North and 35º South latitudes (Rigby et al. 2019; Young and Carlson 2020). In the Western Atlantic, oceanic whitetip sharks occur from Maine to Argentina, including the Caribbean and Gulf of Mexico. In the Central and Eastern Atlantic, the species occurs from Madeira, Portugal south to the Gulf of Guinea, and possibly in the Mediterranean Sea. In the western Indian Ocean, the species occurs in waters of South Africa, Madagascar, Mozambique, Mauritius, Seychelles, India, and within the Red Sea. Oceanic whitetip sharks also occur throughout the Western and Central Pacific, including China, Taiwan, the Philippines, New Caledonia, Australia (southern Australian coast), Hawaiian Islands south to Samoa Islands, Tahiti and Tuamotu Archipelago and west to Galapagos Islands. Finally, in the eastern Pacific, the species occurs from southern California to Peru, including the Gulf of California and Clipperton Island (Compagno 1984; Ebert et al. 2013) (Figure 1).

The species is usually found offshore in the open ocean, on the outer continental shelf, or around oceanic islands in deep water greater than 184 meter (m), and occurs from the surface to at least 152 m depth. Oceanic whitetip sharks are highly mobile and can travel great distances in the open ocean environment, with excursion estimates of several thousand kilometers. The oceanic whitetip shark is a long-lived, slow-growing, and late-maturing species that has low-moderate productivity.

[1] This EA applies CEQ's NEPA regulations currently in effect. See 40 C.F.R. § 1506.13

[2] NOAA Administrative Order (NAO) 216-6A "Compliance with the National Environmental Policy Act, Executive Orders 12114, Environmental Effects Abroad of Major Federal Actions; l1988 and 13690, Floodplain Management and 11990, Protection of Wetlands" issued April 22, 2016 and the Companion Manual for NAO 216-6A "Policy and Procedures for Implementing the National Environmental Policy Act and Related Authorities" issued January 13, 2017.

Figure 1. Geographic distribution of the oceanic whitetip shark. The question mark in the Mediterranean Sea indicates that existing reports of occurrence in this region are highly uncertain. Source: Young and Carlson 2020.

The oceanic whitetip shark was characterized historically as one of the most abundant oceanic sharks (Mather and Day 1954; Backus et al. 1956; Compagno 1984). More recently, however, numerous lines of evidence from all three major ocean basins where it occurs (Atlantic, Pacific, and Indian Oceans) suggest that the oceanic whitetip shark has experienced significant historical declines of varying magnitudes over the past several decades, and that these declines are likely ongoing (NMFS 2023). Rigby et al. (2019), using an area-weighted global population trend, estimated a median global population reduction at 98-100 percent, with the highest probability of 80-99 percent reduction over three generation lengths (61.2 years based on International Union for Conservation of Nature (IUCN) criteria). This is the only global trend estimate available for the oceanic whitetip shark. However, it should be noted that there was no abundance data that spanned over three generations and the decline was based on the projected trend from the current observed data. The following threats have been assessed and identified as contributing to the threatened status of the species: incidental bycatch in commercial fisheries (particularly pelagic longlines (PLL), purse seines, and gillnets), international trade of oceanic whitetip shark fins, and inadequate regulatory mechanisms (management) to address these threats (Young et al. 2017; NMFS 2023). There are several other stressors that are of lesser concern but may work synergistically to negatively affect the population viability of oceanic whitetip sharks (e.g., effects of climate change, pollutants, and recreational fisheries).

On September 21, 2015, Defenders of Wildlife petitioned NMFS to list the oceanic whitetip shark as threatened or endangered under the ESA throughout its entire range, or, alternatively, to list two distinct population segments of the oceanic whitetip shark, as described in the petition, as threatened or endangered, and to designate critical habitat. On January 12, 2016, NMFS made a positive 90-day finding (81 FR 1376) that the petition presented substantial scientific or commercial information indicating that listing the species throughout its entire range may be warranted and announced the initiation of a formal status review. An Extinction Risk Analysis (ERA) Team was convened to conduct an extinction risk analysis for the species. The resulting

status review report (Young et al. 2017; available at https://www.fisheries.noaa.gov/resource/document/endangered-species-act-status-review-report-oceanic-whitetip-shark-carcharhinus) incorporates and summarizes the best available scientific and commercial data available and presents the ERA team's professional judgment of the extinction risk facing the oceanic whitetip shark.

On December 29, 2016, NMFS made a determination that the oceanic whitetip shark is likely to become in danger of extinction throughout its range in the foreseeable future from a combination of factors, and proposed to list the species as threatened (81 FR 96304). NMFS relied on the status review developed by the ERA team, as well as an assessment of current and planned conservation actions, in coming to this conclusion. After reviewing public comments received, NMFS published a final rule listing the species as threatened under the ESA on January 30, 2018, which became effective on March 1, 2018 (83 FR 4153).

1.2 Environmental Review Process

NEPA, the CEQ regulations, and NOAA policy and procedures for implementing NEPA, require NMFS to consider the potential environmental impacts of a proposed action before making a decision. NMFS' issuance of regulations under Section 4(d) of the ESA, is a major federal action subject to NEPA and therefore requires analysis of the associated environmental effects. An EA is a concise public document that provides an assessment of the potential effects a major federal action may have on the human environment. Major federal actions include activities that federal agencies fully or partially fund, regulate, conduct, or approve.

This EA will enable NMFS to determine whether there are likely to be significant impacts on the human environment from extending the ESA section 9(a)(1) prohibitions to the oceanic whitetip shark and compare those potential impacts to alternatives to the action. This analysis considers both the negative and positive impacts of these three alternatives. This EA will also be used by NMFS as the basis for either a finding of no significant impact or for the preparation of an environmental impact statement. Significance is evaluated in terms of both the context and intensity of a proposed action. The interests of user groups that either benefit from the existence of and protections for the species or are impacted by such protections.

In addition, NMFS, to the fullest extent possible, integrates the requirements of NEPA with other regulatory processes required by law or by agency practice so that all procedures run concurrently, rather than consecutively. This includes coordination within NOAA (e.g., the NMFS Office of Sustainable Fisheries), as appropriate, during NEPA reviews prior to implementation of a proposed action to ensure that all applicable requirements are met.

1.3 Public Involvement

Although agency procedures do not require publication of the draft EA prior to finalizing an EA, NMFS is relying on the public process pursuant to the ESA to develop and evaluate information relevant to an analysis under NEPA. For this action, the *Federal Register* notice (FRN) of the proposed rulemaking includes a description of the Proposed Action. The FRN of the proposed rulemaking, the draft EA, and the corresponding public comment period are instrumental in providing the public with information on relevant environmental issues and offering the public a

meaningful opportunity to provide comments for our consideration in both the ESA and NEPA processes.

NMFS shall accept public comment during the 60-day period advertised in the FRN. A detailed summary of the comments, and NMFS' responses to those comments, will be included in the FRN for the final rule, if issued.

1.4 Compliance with Other Laws

Endangered Species Act (16 U.S.C. §§ 1531-1544)

The ESA provides several means for the conservation of threatened and endangered species. Section 7 of the ESA requires Federal agencies to consult with NMFS to ensure that any activity they authorize, fund, or carry out (called the "agency action") does not jeopardize the continued existence of an endangered or threatened species, nor destroy or adversely modify its critical habitat. The protections under Section 7 of the ESA automatically apply when a species is listed as endangered or threatened. Under the ESA Section 7 consultation process, if a federal agency determines its action is likely to adversely affect a species or destroy or adversely modify critical habitat, the agency engages in formal consultation with NMFS. At the conclusion of formal consultation, NMFS issues a Biological Opinion that analyzes the effects of the action. If NMFS concludes the action will jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat, NMFS specifies Reasonable and Prudent Alternatives (RPAs) to the proposed action. If NMFS concludes the action will not jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat and take of the species is prohibited, NMFS specifies Reasonable and Prudent Measures and Terms and Conditions (RPMs) to mitigate the effects of the action and authorizes any allowable "incidental take" of the species.

Section 9(a)(1) of the ESA prohibits any person subject to the jurisdiction of the United States from the following activities with respect to endangered species:

A) Import any such species into or export any such species from the U.S.;

B) Take any such species within the U.S. or the U.S. territorial sea;

C) Take any such species upon the high seas;

D) Possess, sell, deliver, carry, transport, or ship, by any means whatsoever, any such species taken in violation of (B) and (C) above;

E) Deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of commercial activity, any such species;

F) Sell or offer for sale in interstate or foreign commerce any such species; or

G) Violate any regulation pertaining to such species or to any threatened species of fish or wildlife listed pursuant to Section 4 of this Act and promulgated by the Secretary pursuant to authority provided by this Act.

All of the prohibitions listed under Section 9 of the ESA automatically apply when a species is listed as endangered but not when a species is listed as threatened. For threatened species, Section 4(d) of the ESA authorizes the Secretary to promulgate protective regulations the Secretary deems are necessary and advisable for the conservation of the threatened species. The Secretary also has discretion to apply by regulation any of the prohibitions listed under Section 9(a)(1) of the ESA to any threatened species of fish or wildlife. NMFS determines which Section 9(a)(1) prohibitions to apply based on the biological status, conservation needs, and potential threats to the threatened species.

The ESA allows for exceptions to the section 9 prohibitions through interagency consultations as prescribed by ESA section 7 (described above) or through a permit issued pursuant to Section 10. Section 10(a)(1)(A) allows NMFS to permit any action otherwise prohibited by section 9 for scientific purposes or to enhance the propagation or survival of the affected species. NMFS issues scientific research and enhancement permits to Federal and non-Federal entities conducting research or conservation activities that involve take of a listed species, in exception to any Section 9 prohibitions. Section 10(a)(1)(B) allows NMFS to issue incidental take permits (ITPs) to non-Federal entities performing activities that may incidentally take a listed species in the course of an otherwise lawful activity; these permits provide an exception to the section 9(a)(1)(B) prohibitions.

Section 11 of the ESA provides for civil and criminal penalties for violation of Section 9(a)(1) or of regulations issued under the ESA.

Regulatory Flexibility Act (RFA) (5 U.S.C. §§ 601-612)

First enacted in 1980, the RFA was designed to ensure that the government considers the potential for its regulations to unduly inhibit the ability of small entities to compete. The goals of the RFA include increasing the government's awareness of the impact of regulations on small entities and encouraging agencies to exercise flexibility to provide regulatory relief to small entities. When a proposed regulation is published for public comment in the *Federal Register*, the RFA requires the agency to prepare and make available for public comment an analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions). For this proposed rulemaking, this analysis takes the form of an initial regulatory flexibility analysis (IRFA). As described in 5 U.S.C. § 603, each IRFA is required to contain:

1. "a description of the reasons why action by the agency is being considered;

2. a succinct statement of the objectives of, and legal basis for, the proposed rule;

3. a description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply;

4. a 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 requirement and the type of professional skills necessary for preparation of the report or record;

5. an identification, to the extent practicable, of all relevant Federal rules which may duplicate, overlap or conflict with the proposed rule."

Additionally, each IRFA is required to contain "a description of 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."

1.5 Document Scope

The analysis in this EA addresses potential direct, indirect, and cumulative impacts to affected physical, biological, and socioeconomic resources, resulting from NMFS' Proposed Action and alternatives. This EA provides focused information on impacts of environmental concern related to the proposed issuance of the ESA 4(d) regulations with and without exceptions, and a no action alternative.

2.0 PURPOSE OF AND NEED FOR ACTION

2.1 The Proposed Action

NMFS proposes to establish a Section 4(d) rule for the oceanic whitetip shark to apply the prohibitions in Section 9 to this species with specified exceptions. No regulatory timeline exists for the issuance of a Section 4(d) rule.

2.2. Purpose and Need

The purpose of this action is to provide for the conservation of the threatened oceanic whitetip shark under the authority of section 4(d) of the ESA by issuing protective regulations outlined in section 9 of the ESA, and identifying specific exceptions to these prohibitions where actions would be beneficial to the conservation of the species.

This action is needed because, in the absence of a 4(d) rule, the ESA section 9(a)(1) prohibitions do not apply to threatened species, including the oceanic whitetip shark. Although NMFS did not propose protective regulations at the time of listing, the final listing determination stated that NMFS may consider potential protective regulations pursuant to section 4(d) for the oceanic whitetip in a future rulemaking (83 FR 4153; January 30, 2018). We concluded that within the jurisdiction of the United States, regulations to control for overutilization of oceanic whitetip sharks in U.S. waters, including fisheries management plans with quotas and trip limits, species-specific retention prohibitions in PLL gear, and finning regulations, were not in and of themselves inadequate such that they were contributing to the global extinction risk of the species (81 FR 96304; December 29, 2016). Further, NMFS has recently added the oceanic whitetip shark to the prohibited retention list for all U.S. Atlantic shark fisheries (89 FR 278; January 3, 2024). However, retention of oceanic whitetip sharks is not prohibited in all gear types or fisheries, and other forms of take beyond retention are not prohibited.

3.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

3.1 Alternatives Considered

NMFS' Proposed Action is to issue a Section 4(d) rule under the ESA to apply the prohibitions in Section 9 (a)(1) of the ESA to the oceanic whitetip shark to provide for the conservation of the species, with limited exceptions. In accordance with the NEPA and the CEQ regulations, NMFS is required to consider a reasonable range of alternatives to a proposed action as well as the No-action Alternative. "Reasonable alternatives means a reasonable range of alternatives that are technically and economically feasible, and meet the purpose and need for the proposed action" (40 CFR 1508.1(z)).

The evaluation of alternatives under NEPA assists NMFS with assessing alternative ways to achieve the purpose and need for their proposed action that may result in less environmental harm. To warrant detailed evaluation under NEPA, an alternative must be reasonable, along with meeting the stated purpose and need for the proposed action. Accordingly, for this action, an alternative must meet these criteria to be considered "reasonable":

1) To conserve the oceanic whitetip shark.

2) To comply with the mandates of the ESA.

3) To regulate activities to avoid or minimize take of oceanic whitetip sharks.

4) To avoid or minimize import and export of oceanic whitetip sharks and parts and products thereof.

5) To allow ongoing and future scientific research to advance the conservation and recovery of the oceanic whitetip shark.

6) To comply with all other federal laws and regulations.

Three alternatives were considered. The main features of each alternative are summarized below and in Table 3.1-1:

• *Alternative 1*, *No-action Alternative*: Do not promulgate regulations under Section 4(d) of the ESA to conserve the oceanic whitetip shark.

• *Alternative 2, Proposed Action*: Promulgate regulations under Section 4(d) of the ESA that apply all prohibitions under Section 9(a)(1) of the ESA to the oceanic whitetip shark, with specified exceptions for scientific research and law enforcement activities.

• *Alternative 3*: Promulgate regulations under Section 4(d) of the ESA that apply all prohibitions of Section 9(a)(1) of the ESA to the oceanic whitetip shark, without the exceptions included in Alternative 2.

Table 3.1-1 Summary of the alternatives considered by NMFS. The primary features, similarities, and differences between the alternatives are highlighted.

Alternative Description	**Application of ESA Section 9 prohibitions**	**Application of take prohibitions**	**Exception/Exemptions in addition to those provided by Sections 7 and 10 of the ESA**
No-action Alternative; No change from current management [no ESA 4(d) rule]	Do not apply any ESA Section 9 prohibitions	Do not apply any take prohibitions	N/A
Alternative 2, Proposed Action; Same as the protections applied to endangered species, with some exceptions	Apply all ESA Section 9 prohibitions with exceptions for scientific research and law enforcement activities	Prohibit take of the oceanic whitetip shark, except in certain scientific research and law enforcement circumstances	Yes
Alternative 3; Same as the protections applied to endangered species	Apply all ESA Section 9 prohibitions	Prohibit all take of the oceanic whitetip shark	No

3.2 Alternative 1, No-action Alternative

The No-action Alternative would maintain the physical, biological, and socioeconomic status quo, and presents the environmental and social baseline against which to measure the effects of taking any action, including implementation of other alternatives. Under the No-action Alternative, none of the prohibitions under section 9(a)(1) of the ESA would be extended to provide for the conservation of the oceanic whitetip shark. Current programs would continue to guide management of the species. ESA Section 7 consultations on federal agency actions would only address whether an action jeopardizes the continued existence of the oceanic whitetip shark. RPAs would only be imposed if federal agency actions that take oceanic whitetip sharks are likely to jeopardize the continued existence of the species. RPMs to minimize the impact of take would not be available under this alternative because RPMs are only imposed if take of the species is prohibited. ESA section 10 permits would not be required for non-federal actions that take the species because take would not be prohibited.

3.3 Alternative 2, Proposed Action

Under Alternative 2, NMFS would promulgate a 4(d) rule that extends all of the prohibitions enumerated in section 9(a)(1) of the ESA to the oceanic whitetip shark, with limited exceptions for specified categories of activities that contribute to the conservation of the species.

The ESA section 9(a)(1) prohibitions make it unlawful, with regard to endangered species, for any person subject to the jurisdiction of the United States to:

A. Import any such species into, or export any such species from the United States;

B. Take any such species within the United States or the territorial sea of the United States;

C. Take any such species upon the high seas;

D. Possess, sell, deliver, carry, transport, or ship, by any means whatsoever, any such species taken in violation of subparagraphs (B) and (C);

E. Deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of a commercial activity, any such species;

F. Sell or offer for sale in interstate or foreign commerce any such species; or

G. Violate any regulation pertaining to such species or to any threatened species of fish or wildlife listed pursuant to section 1533 of this title and promulgated by the Secretary pursuant to authority provided by this chapter.

There are two specific exceptions to the section 9(a)(1) prohibitions included in the Proposed Action.

- Take resulting from scientific research activities that advance the conservation and/or recovery of the species, as well as import and export of scientific samples and specimens.
- Take resulting from certain emergency response and salvage activities carried out by authorized law enforcement officials or management authorities.

Scientific research to fill data gaps related to the biology, life history, ecology, movement patterns, habitat use, and population structure of the oceanic whitetip shark is critical to conserve the species. Some of these research activities may require targeted and/or incidental capture of individual sharks in order to take biological samples, apply various tracking tags, and/or conduct other research activities. Therefore, such activities require conditional exceptions from the take prohibitions both in U.S. waters and on the high seas. If conditions described in the protective regulation are met, an ESA section 10(a)(1)(A) permit would not be required for researchers that conduct take in the course of such scientific research.

Scientific research activities are excepted from the ESA section 9(a)(1)(A) prohibition on import and export because a researcher may need to import samples collected in a foreign country for analysis within the United States. Similarly, a researcher may export samples collected in the United States to a colleague in a foreign country. Including this exception in the preferred alternative relieves researchers of the requirement to obtain an ESA 10(a)(1)(A) permit for import or export of oceanic whitetip shark samples or specimens, as long as the

samples or specimens are accompanied by the proper permits or certificates issued under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

In certain circumstances, law enforcement officials may need to take an oceanic whitetip shark when acting in the course of their official duties. Circumstances in which such action may be necessary include aiding a sick, injured, entangled, or stranded oceanic whitetip shark, or disposing of a dead oceanic whitetip shark. There may also be opportunities for collection of scientifically valuable data or samples from oceanic whitetip sharks that may arise in a location, or at a time, when specialists who work with the species are not present. In these situations, the proposed exemption would allow authorized representatives of natural resources agencies to coordinate with NMFS to secure such data/material.

In addition to the proposed exceptions described above, the ESA provides specific procedures for obtaining authorization for prohibited take through either interagency consultation as prescribed by ESA Section 7 or a permit as prescribed by ESA section 10. All other activities that result in take of the oceanic whitetip shark may be punishable by civil or criminal penalties and fines as stipulated by section 11 of the ESA.

The exceptions included in this alternative contribute to the conservation of the oceanic whitetip shark because these activities are beneficial to the species. Scientific research activities improve our understanding of the status of and risks facing the oceanic whitetip shark, and provide critical information for assessing the effectiveness of current and future management practices. Law enforcement activities such as aiding entangled oceanic whitetip sharks or salvaging dead oceanic whitetip sharks for further scientific study, as necessary, may reduce instances of mortality and support scientific research efforts.

3.4 Alternative 3

Alternative 3 would apply all Section 9(a)(1) prohibitions of the ESA to the oceanic whitetip shark, without the exceptions included in Alternative 2. As described in section 1.3 of this document, exceptions to these prohibitions may be authorized through interagency consultations as prescribed by ESA section 7 (described above) or through a permit issued pursuant to Section 10. While activities that are known to contribute to the extinction risk of the species (e.g., take) would be prohibited, activities that contribute to the conservation and recovery of the species such as scientific research involving take would likely be deterred or delayed due to the requirement to obtain an ESA section 10(a)(1)(A) permit.

4.0 AFFECTED ENVIRONMENT

4.1 Introduction

This chapter describes the environmental baseline or the current conditions of the environment that could potentially be affected if the Proposed Action or an alternative were implemented. There are three broad categories that NMFS uses to evaluate the environmental impacts of proposed actions: physical, biological, and socioeconomic. The physical environment includes geographic, oceanographic, and climatic factors. The biological environment includes the status and distribution of marine species, life history information, and information on threats and stressors. The analysis of the socioeconomic environment includes impacts on affected economic sectors of the community from regulatory actions and any interrelated or additional social

impacts. In each section, the relevance of the issue to the Proposed Action and alternatives is reviewed, followed by a description of the relevant resources.

4.2 Physical Environment

Geographic Factors - The physical environment in which the alternatives would be implemented consists of the areas where oceanic whitetip sharks are known to occur within marine waters of the United States, U.S. territorial waters, and the high seas (see the species' range in Figure 1). The species occurs circumglobally; however, the alternatives presented above only apply to persons under the jurisdiction of the United States.

Oceanographic Factors - Oceanic whitetip sharks are pelagic, increasing in abundance away from continental shelves (Backus et al. 1956; Compagno 1984; Bonfil et al. 2008). The species typically uses waters from 0-200 m during the day then makes short-duration foraging dives as deep as ~1100 m at night (Howey-Jordan et al. 2013; Andrzejaczek et al. 2018; Papastamitiou et al. 2018). Regional and seasonal variation in the depth of water occupied is also apparent, with individuals avoiding the top 50 m of the water column in the summer and/or when water temperatures exceed 28°C (Tolotti et al. 2015; Andrzejaczek et al. 2018). Various studies have confirmed that the preferred thermal niche of the oceanic whitetip shark falls between 15 and 28°C, though it is more common in waters between 20 and 28°C (Bonfil et al. 2008; Musyl et al. 2011; Howey-Jordan et al. 2013). As a result of these temperature-mediated behavioral patterns, the species is most likely to encounter threats from commercial and recreational fishing gear deployed in the upper portion of the water column, generally from 0-125 m (Howey-Jordan et al. 2013; Tolotti et al. 2015). Human activities that affect nearshore waters and benthic habitats are unlikely to appreciably affect population status of the oceanic whitetip shark (Young et al. 2017).

Climatic Factors - Though widely distributed in tropical and temperate seas, the oceanic whitetip shark is susceptible both to broad climatic forcing factors and regional variation in conditions that affect ocean circulation, sea surface temperature, physiochemical traits of oceanic waters, and biological responses to these variables. Sharks are likely to shift their distributions both latitudinally and within the water column as sea surface temperatures approach upper thermal limits for the species (Osgood et al. 2021). Distributional shifts could result in oceanic whitetip sharks inhabiting the territorial waters of nations they currently do not, bringing them into contact with novel threats from commercial and recreational fishing fleets. Further, avoidance of warmer surface waters may increase the oceanic whitetip shark's vulnerability to deeper-set longlines (Andrzejaczek et al. 2018). Variability in optimal temperature ranges between species may lead to reduced areas of overlap between the oceanic whitetip shark and its prey (Andrzejaczek et al. 2018).

4.3 Biological Environment

Life history parameters, status and trends, and threats and stressors for the oceanic whitetip shark are briefly presented below. These aspects are discussed in detail in the Status Review published in December 2017 (Young et al. 2017), in the proposed and final listing rules published in the Federal Register (81 FR 96304 and 83 FR 4153, respectively), and the Recovery Status Review (NMFS 2023). These documents are herein incorporated by reference and are available on the NMFS website (https://www.fisheries.noaa.gov/species/oceanic-whitetip-shark#conservation-

management).

The oceanic whitetip shark is viviparous with placental embryonic development. Parturition is thought to occur on alternate years after a 9-12 month gestation period, and an average of six pups are produced in each litter. The species is a long-lived, slow-growing, and late-maturing species that has low-moderate productivity (NMFS 2023).

Historical fisheries data and observations suggest that the species was once among the most common and ubiquitous shark species in tropical waters around the world. More recently, however, numerous lines of evidence from all three major ocean basins (Atlantic, Pacific, and Indian Oceans) suggest that the oceanic whitetip shark has experienced significant historical declines of varying magnitudes over the past several decades, and that these declines are likely ongoing (NMFS 2023). Rigby et al. (2019) estimated a median global population reduction at 98-100 percent over three generation lengths (61.2 years). This is the only global trend estimate available for the oceanic whitetip shark.

The following threats have been assessed and identified as contributing to the threatened status of the species: incidental bycatch in commercial fisheries (particularly PLL, purse seines, and gillnets), international trade of oceanic whitetip shark fins, and inadequate regulatory mechanisms (management) to address these threats. There are several other stressors that are of lesser concern but may work synergistically to negatively affect the population viability of oceanic whitetip sharks (e.g., effects of climate change, pollutants, and recreational fisheries). Currently, a suite of region-specific rules and best practices regulate the harvest of oceanic shark species, including the oceanic whitetip shark, both in U.S. and international waters (Young et al. 2017; Young and Carlson 2020). NMFS concluded in its final listing determinations that existing regulations have not totally abated the impact of stressors on the threatened oceanic whitetip shark (83 FR 4153). Under the No-action Alternative, the current threats and stressors would continue to affect population status of the species. Managing some or all of these threats and stressors may decrease synergistic stress effects, thereby decreasing the rate of species decline.

The status review and the final listing determination concluded that the oceanic whitetip shark is not currently in danger of extinction throughout its range. However, it is likely to become so within the foreseeable future due to significant and ongoing threats of overutilization and largely inadequate regulatory mechanisms, as well as trends in the species' abundance, productivity and genetic diversity. This status is not being ameliorated by efforts to protect the species by the state or foreign governments.

4.4 Socioeconomic Environment

The area in which the alternatives would be implemented consists of federal, state, and territorial U.S. waters, as well as the high seas. The following is taken from the IRFA (Appendix A), incorporated by reference in this EA, and summarizes the affected socioeconomic resources within the area.

The prohibitions promulgated through the alternatives other than the No-Action Alternative apply to thousands of entities engaged in commercial and recreational fishing; import, export, and wholesale of seafood products; and air and truck freight transport. However, very little

harvest, trade, and transport of oceanic whitetip sharks by persons subject to the jurisdiction of the United States has occurred in recent years. Combined commercial and recreational harvest of oceanic whitetip sharks in U.S. federal and state or territorial fisheries and by U.S.-flagged vessels operating in international fisheries has been negligible in recent years. NOAA Fisheries' annual landings statistics indicate that there were no commercial or recreational landings of oceanic whitetip sharks in U.S. state or federal waters from 2015 to 2020, and there have been no commercial landings in U.S. territorial waters since 2016 (NOAA Fisheries 2023). In addition, no legal commercial import into or export from the United States of oceanic whitetip sharks or their fins occurred over the years 2013-2021, and very limited import and export of the species for scientific or educational purposes occurred over this time frame (CITES 2023).

There are approximately 2,100 U.S.-flagged vessels participating in international fisheries of the Atlantic Ocean, Eastern Pacific Ocean (EPO), and Western and Central Pacific Ocean (WCPO) (ICCAT 2023; IATTC 2023; WCPFC 2023). Based on landings value data, the large majority of participants in these fisheries, as well as permit holders in federally managed commercial fisheries, likely qualify as small entities with average annual revenues less than $11 million (80 FR 81194; NOAA Fisheries 2022a). The Regional Fishery Management Organizations (RFMOs) which manage the high seas fisheries prohibit the retention, transshipping, landing, storing, selling, or offering for sale any part or whole carcass of oceanic whitetip sharks in any fishery by Contracting Parties, including U.S.-flagged vessels and persons subject to the jurisdiction of the United States (ICCAT 2010; IATTC 2011; WCPFC 2012). In addition, the Atlantic Highly Migratory Species (HMS) Pelagic Longline Fishery and Hawaii Pelagic Shallow Set Longline Fishery already undergo Section 7 consultation on effects of the fisheries' actions on oceanic whitetip sharks in waters of the U.S. Exclusive Economic Zone and on the high seas. Despite the lack of a 4(d) prohibition on take, NMFS requires incidental take statements (ITSs) and has in place reasonable and prudent measures intended to improve release conditions and post-release survival, as well as monitoring/reporting requirements for oceanic whitetip sharks (NMFS 2019; NMFS 2020).

Domestic fisheries in the Atlantic most likely to interact with oceanic whitetip sharks and, therefore, be impacted by the Proposed Action, include the Atlantic HMS fisheries and NMFS' Southeast Region's Coastal Migratory Pelagic (CMP) and Caribbean Reef Fish Fisheries. Recent Atlantic HMS fishery management measures prohibit the retention of oceanic whitetip sharks in all commercial and recreational HMS fisheries (89 FR 278). As of October 2022, approximately 206 Shark Directed Limited Access and 241 Shark Incidental Limited Access permits were issued, and there were 23,607 Atlantic HMS Angling permit holders and 4,175 charter/headboat operator permit holders (NOAA Fisheries 2022b). 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, and two oceanic whitetip sharks were harvested in the recreational sector (A. Brame, personal communication, 31 August 2023).

In the EPO, oceanic whitetip sharks are not a "managed species" under the Pacific Fishery Management Council or North Pacific Fishery Management Council, nor are they an expressly prohibited species given their low frequency of occurrence in the region.

In the WCPO, the NMFS Pacific Islands Regional Office (PIRO) has completed Section 7 consultations on all of its federally managed fisheries that are likely to incidentally capture oceanic whitetip sharks. These include the Hawaii Deep-set Longline Fishery; Hawaii Shallow-set Longline Fishery; Hawaii, Guam, and The Commonwealth of the Northern Mariana Islands Bottomfish Fisheries; and U.S. WCPO Purse Seine Fishery. Despite the lack of a 4(d) prohibition on take in these fisheries, NMFS requires ITSs and has in place RPMs aimed at minimizing captures, improving release conditions and post-release survival, and monitoring/reporting for oceanic whitetip sharks. Inclusion of the ITSs is intended to ensure monitoring of the level and nature of any incidental take and to serve as a check on the biological opinions' no-jeopardy conclusions by providing a reinitiation trigger if the level of take analyzed in a biological opinion is exceeded (C. Young, personal communication, 6 September 2023; NMFS 2019).

Entities potentially engaged in the import, export, wholesale, or transport of oceanic whitetip sharks or their derivative products are categorized under the North American Industry Classification System (NAICS) codes 424460 (Fish and Seafood Merchant Wholesalers), 484 (Truck Transportation subsector), and 481112 (Scheduled Freight Air Transportation). According to data gathered from the Dun & Bradstreet Hoovers Database, there are more than 8,000 U.S. small businesses with primary NAICS code 424460, approximately 500,000 U.S. small businesses with a primary NAICS code within the 484 subsector, and approximately 900 U.S. small businesses with primary NAICS code 481112. A query of the CITES trade database revealed a single commercial import of oceanic whitetip shark fins into the U.S. between 2013 to 2021 and that this import, in 2019, was seized or confiscated. The CITES data further indicate that there were no commercial exports of oceanic whitetip shark fins or specimens from the U.S. between 2013 and 2021 and that the last export of oceanic whitetip sharks or derivative products occurred in 2019 and was for non-commercial purposes (CITES 2023).

Entities conducting scientific research or enhancement activities involving oceanic whitetip sharks currently are not required to obtain a Section 10(a)(1)(A) scientific enhancement permit. Nor are NMFS or any other governmental entity that has co-management authority for the oceanic whitetip shark required to obtain a section 10(a)(1)(A) permit if their actions result in take of an oceanic whitetip shark.

5.0 Environmental Consequences

5.1 Introduction

In this chapter, we describe the anticipated environmental consequences of the Proposed Action and alternatives on the resources described in the *Affected Environment* section. We also present the scientific and analytical basis for comparison of alternatives (see Table 5.1-1). The potential impacts are described in terms of their characteristics as defined below.

Type of Potential Impacts: Direct, indirect, and cumulative impacts are defined at 40 CFR 1508.7 and 1508.8, and these definitions are presented below. Cumulative impacts are discussed in section 5.7 of this document.

- Direct impact: A known or potential impact caused by the proposed action or project that occurs at the time and place of the action.
- Indirect impacts: A known or potential impact caused or induced by the proposed action or project that occurs later than the action or is removed in distance from it, but is still reasonably expected to occur.
- Cumulative impacts: A known or potential impact resulting from the incremental effect of the proposed action added to other past, present, or reasonably foreseeable future actions.

Magnitude of Potential Impacts: The degree to which the alternatives would impact a particular resource was qualitatively assessed and characterized using the relative terms minor, moderate and major. The duration of the impact (short-term, long-term, and permanent); whether the outcome is beneficial, adverse, or neutral; and geographic range of impact were considered.

- 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.

Table 5.1-1. Summary of the potential environmental consequences of the alternatives considered under Section 4(d) of the ESA.

	Physical Environment	**Biological Environment**	**Socioeconomic Environment**
Alternative 1: No-action Alternative	None.	None. Oceanic whitetip shark abundance decline is likely to continue because take, as well as the import and export of the species would continue to be allowed.	None.

	Physical Environment	**Biological Environment**	**Socioeconomic Environment**
Alternative 2: Proposed Action	Degradation of the physical environment is not expected; indirect beneficial impacts on the physical environment of oceanic whitetip sharks and other protected species are expected through imposition of RPMs in ESA Section 7 consultations.	Section 9 prohibitions would provide for the protection and conservation of the species. This Alternative would allow scientific research to inform conservation and management to support population recovery, providing an indirect beneficial impact of moderate magnitude.	Direct and indirect impacts to potentially affected industries and entities would likely be minor because current regulations limit the opportunity for legal harvest of oceanic whitetip sharks, and legal harvest of the sharks has been negligible in recent years. Qualifying scientific research and law enforcement entities would not incur the cost of obtaining section 10(a)(1)(A) permits required by Alternative 3.

	Physical Environment	Biological Environment	Socioeconomic Environment
Alternative 3	Degradation of the physical environment is not expected; indirect positive impacts on the physical environment of oceanic whitetip sharks and other protected species are expected through imposition of RPMs in ESA Section 7 consultations.	Section 9 prohibitions would provide for the protection and conservation of the species. However, delayed and deterred scientific research activities could result in potential missed opportunities to accelerate population recovery.	The administrative effort and associated cost of obtaining section 10(a)(1)(A) permits that would not be required under the Proposed Action constitutes an incremental impact of this alternative relative to impacts resulting from the Proposed Action. These direct impacts are expected to be minor.

5.2 Alternative 1, No-action Alternative

5.2.1 Physical Environment

This alternative would not change the nature of any use of the environment, so implementation of this alternative is not expected to cause degradation of the physical environment. No impacts to the physical environment are anticipated.

5.2.2 Biological Environment

Under the No-action Alternative, none of the prohibitions under section 9(a)(1) of the ESA (including prohibitions on take) would be extended to the oceanic whitetip shark. This alternative is not expected to slow the rate of abundance decline because of a number of unabated threats and stressors. Oceanic whitetip shark abundance decline is likely to continue because take, as well as the import and export of the species, would continue to be allowed. No impacts to the biological environment are anticipated.

5.2.3 Socioeconomic Environment

Implementation of the No-action Alternative would result in no additional regulatory burdens or costs for entities involved in activities to which the section 9(a)(1) prohibitions would apply under the Proposed Action or Alternative 3. No impacts on the socioeconomic environment are anticipated.

5.3 Alternative 2, Proposed Action

5.3.1 Physical Environment

The Proposed Action is not expected to cause degradation of the physical environment. It is expected that this alternative would have indirect positive impacts on the physical environment of oceanic whitetip sharks and other protected species through imposition of RPMs in ESA Section 7 consultations.

If the Proposed Action is implemented, take of oceanic whitetip sharks (subject to the exceptions for Alternative 2) would be prohibited. The ESA allows NMFS to permit an otherwise prohibited take under Section 7(a)(2) through the issuance of an ITS, which sets forth the level of take allowed. The ITS must specify the RPMs that NMFS considers necessary or appropriate to reduce the impacts of expected take. It also sets forth the terms and conditions for implementing RPMs, including (but not limited to) reporting requirements, with which the Federal action agency or applicant must comply. RPMs, along with the terms and conditions that implement them, cannot alter the basic design, location, scope, duration, or timing of the action and may only involve minor changes (50 CFR 402.15(i)(2)).

RPMs that NMFS may issue for the activities that result in take include, but are not limited to, collection of data on fisheries interactions (e.g., data on capture, injury, and mortality as well as temporal and spatial data) and development and implementation of modified fishing practices intended to minimize incidental capture and mortality. Thus, the issuance of RPMs is expected to result in indirect beneficial impacts on the physical environment through reduced presence of fishing gear in the environment for the oceanic whitetip shark. The impacts may be minor to moderate depending on the specific RPMs that are issued.

5.3.2 Biological Environment

This alternative extends all ESA section 9(a)(1) prohibitions to the oceanic whitetip shark, with exceptions to the import, export, and take prohibitions included for specific activities. This alternative would have indirect beneficial effects on the species.

Particularly, the ESA prohibitions extended by this alternative would limit the adverse effects of actions funded, authorized, or carried out by federal agencies on the species. Such actions include (but are not limited to) authorization of federal commercial fisheries (including interactions of fishing gear with the species), in-water construction, dredge and fill activities, off-shore wind development, and research activities. Currently, under ESA Section 7, federal agencies must consult with NMFS when any action may affect oceanic whitetip sharks. However, this alternative would not only require an analysis of whether a federal action would jeopardize the continued existence of the species; it would require issuing RPMs specified as necessary or appropriate to minimize the impacts of incidental take of oceanic whitetip sharks resulting from these federal actions. Avoiding and reducing impacts to the oceanic whitetip shark also has the potential to limit the effects of federal actions on other affected species in the federal action area, for instance, other pelagic species that are frequently bycaught in PLL fisheries.

Additionally, this alternative would result in a net reduction of the intensity of the stressors and threats contributing to the decline in abundance of the oceanic whitetip shark by prohibiting activities that constitute take under ESA sections 9(a)(1)(B) and 9(a)(1)(C). Activities that may result in take of oceanic whitetip sharks, include (but are not limited to) commercial and recreational fishing activities. Similarly, this alternative would extend the prohibitions under ESA sections 9(a)(1)(A), (D), (E), and (F). These provisions prohibit such activities as import, export, and all other trade and commercial activities. Prohibiting these activities would reinforce existing regulatory mechanisms that provide for the conservation of the oceanic whitetip shark and assist in its recovery.

Last, the exceptions to the ESA section 9(a)(1) prohibitions included in this alternative allow some import, export, and take of oceanic whitetip sharks for scientific research activities, and take in the course of official law enforcement duties. The negative impact of allowing these specified activities is expected to be minor; in fact, they are expected to provide a net conservation benefit for the oceanic whitetip shark. Particularly, scientific research activities improve our understanding of the status of and risks facing the species, and provide critical information for assessing the effectiveness of current and future management practices. Overall the impact to the species is likely to be an indirect beneficial impact of moderate magnitude.

5.3.3 Socioeconomic Environment

A detailed analysis of the potential socioeconomic effects of Alternative 2, the Proposed Action, was conducted (see the draft IRFA in Appendix A) and is incorporated in this section. Under this alternative, ESA section 9(a)(1) prohibitions would apply to, and could therefore potentially directly impact, thousands of entities engaged in commercial and recreational fishing; import, export, and wholesale of seafood products; and air and truck freight transport. However, both direct and indirect impacts would likely be minor to all potentially affected industries and entities, and only a small number of entities would be impacted. Baseline regulations limit the opportunity for legal harvest of oceanic whitetip sharks, and legal harvest of the sharks in international, federal, and state managed fisheries by persons subject to the jurisdiction of the United States has been negligible in recent years in terms of weight and value of landings. In addition, as no legal commercial import into or export from the United States of oceanic whitetip sharks or derivative products has occurred in recent years, any impacts of the import and export prohibition under the Proposed Action would be minor.

The Proposed Action is not expected to impact international fisheries, due to RFMOs' existing prohibitions of the retention, transshipping, landing, storing, selling, or offering for sale any part or whole carcass of oceanic whitetip sharks in any fishery by Contracting Parties, including U.S.-flagged vessels and persons subject to the jurisdiction of the United States. Nor is the Proposed Action expected to result in additional reporting requirements or other incremental impacts on the Atlantic HMS Pelagic Longline Fishery or WCPO federally managed fisheries for incidental take of oceanic whitetip sharks, due to existing RPMs and ITS and monitoring/reporting requirements. While the Proposed Action could directly impact small entities with HMS Shark Directed Limited Access and Shark Incidental Limited Access permits, these impacts are expected to be minor as these permit holders cannot retain any oceanic whitetip sharks under the current regulations. Similarly, any impacts as a result of this proposed rule on small entities sponsoring HMS tournaments in which recreational permit holders participate and HMS

charter/headboat operators are also expected to be none to negligible given the prohibition on retention that is currently in place. Based on historical data, the number of interactions in the CMP Fishery and Caribbean Reef Fish Fisheries is expected to be small and, thus, any economic impacts resulting from the Proposed Action would be minor. As oceanic whitetip sharks are not a "managed species" under the Pacific Fishery Management Council or North Pacific Fishery Management Council, nor an expressly prohibited species given their low frequency of occurrence in the regions, NMFS does not anticipate any impacts on participants in EPO federally managed fisheries from the Proposed Action.

Potential impacts of the Proposed Action on U.S. entities beyond those related to fisheries are anticipated to be minor. Due to the negligible levels of U.S. trade of oceanic whitetip sharks and their derivative products, combined with low levels of harvest in U.S. fisheries, the application of section 9(a)(1)(A), (D), (E), and (F) prohibitions under the Proposed Action is expected to have minor impacts on U.S. entities engaged in the import, export, wholesale, retail sale, or transport of fish and seafood products.

Entities whose scientific research or enhancement activities qualify for the exception to section 9(a)(1)(A), (B), and (C) prohibitions would not need to obtain a Section 10(a)(1)(A) scientific enhancement permit. Under the exception to the section 9(a)(1) prohibitions for qualifying law enforcement activities, neither NMFS nor any other governmental entity that has co-management authority for the oceanic whitetip shark would incur the costs associated with obtaining a section 10(a)(1)(A) permit to be authorized to conduct such activities. While entities conducting aquaculture activities resulting in incidental take of an oceanic whitetip shark could incur direct impacts due to the requirements to obtain a Section 10(a)(1)(B) ITP, there is no foreseeable instance of this occurring due to the lack of overlap between aquaculture activity and the oceanic whitetip's geographic range. Also, it is possible that Section 7 consultation on effects of the aquaculture operations on oceanic whitetip sharks would already address incidental take of the species. Thus, any impacts of the Proposed Action on aquaculture activities would be minor. Similarly, entities conducting derelict gear or trash removal activities on the high seas or those working to disentangle marine mammals from fishing gear/lines could incur direct impacts if they are required to obtain a section 10 ITP. However, the labor costs associated with obtaining a section 10 ITP would constitute minor impacts on the federal and state agencies that typically carry out these activities, and it is possible that section 7 consultation on effects of the derelict gear or trash removal activities operations on oceanic whitetip sharks would already address incidental take of the species.

5.4 Alternative 3

5.4.1 Physical Environment

Similar to the Proposed Action, Alternative 3 is not expected to cause degradation of the physical environment. It is expected that this alternative would have indirect positive impacts of minor to moderate magnitude on the physical environment of oceanic whitetip sharks and other protected species through imposition of RPMs in ESA Section 7 consultations. See 5.3.1 for additional details.

5.4.2 Biological Environment

This alternative would result in a net reduction of the intensity of the stressors and threats contributing to the decline in oceanic whitetip shark abundance by extending the section 9(a)(1) prohibitions to the species. This alternative does not include the exceptions specified in Alternative 2, and therefore any prohibited activities would only be authorized through interagency consultations as prescribed by ESA section 7 or through a permit issued pursuant to Section 10. This alternative would have indirect beneficial effects on the oceanic whitetip shark; however, under this alternative, the requirement to obtain an ESA section 10(a)(1)(A) permit for scientific research activities may deter or delay research that would improve our understanding of the status and threats facing the oceanic whitetip shark. Therefore the beneficial impact is expected to be minor.

5.4.3 Socioeconomic Environment

Socioeconomic effects resulting from this alternative would be equivalent to those generated under the Proposed Action, with a few notable exceptions. Under this alternative, an entity carrying out scientific research activities that would qualify for the exception to section 9(a)(1)(A) and 9(a)(1)(B) prohibitions under the Proposed Action would be required to obtain a section 10(a)(1)(A) permit for such activities. An entity that would qualify under the Proposed Action for the exception from the section 9(a)(1)(A) prohibitions on import and/or export of oceanic whitetip sharks or their parts would also be required to obtain a section 10(a)(1)(A) permit. Labor costs associated with fulfilling these requirements would constitute direct impacts but are expected to be minor. Finally, under this alternative, a law enforcement official or management authority whose take of an oceanic whitetip shark would qualify under the Proposed Action for the exception from the prohibition on take may be required to obtain a section 10(a)(1)(A) permit. Labor costs associated with fulfilling this requirement would constitute direct impacts but are expected to be minor.

5.5 Environmental Justice

Federal agencies are required to address environmental justice issues in NEPA documents. Environmental justice is defined as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies" (*see* Executive Order 12898, Feb. 11, 1994; 59 FR 7629 (Feb. 16, 1994)). NMFS must ensure that the decision-making process for the development of the Section 4(d) rule is fair and that the impacts are evenly distributed. No single group of people, based on racial, ethnic, socioeconomic, or another status, should bear an unequal share of any negative environmental consequences that result from the application of a Section 4(d) rule for the oceanic whitetip shark (*see* Executive Order 14008, Jan. 27, 2021; 86 FR 7619 (Feb. 1, 2021)).

The Proposed Action and alternatives would apply regardless of racial, ethnic, socioeconomic, or any other status of groups of people. Thus, the Proposed Action and alternatives are not expected to impose disproportionately greater burdens on any single group of people based on characteristics of status.

5.6 Unavoidable Adverse Effects and Irreversible and Irretrievable Commitments of Resources

No unavoidable adverse effects or irreversible and irretrievable commitments of resources would be expected to result from implementation of the Proposed Action or any of the alternative Section 4(d) rules. The Proposed Action and alternatives are regulatory actions that do not implement specific actions that would involve the commitment of resources prior to evaluation of their effects. Through this action, NMFS hopes to avoid adverse effects on the oceanic whitetip shark.

5.7 Cumulative Effects

CEQ's NEPA regulations define cumulative effects as "effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (40 CFR §1508.1(g)(3)). The purpose of the cumulative impacts analysis is to ensure that federal decisions consider the full range of an action's consequences, incorporating this information into the planning process.

None of the presented alternatives, when considered cumulatively with other federal, state, and territorial restrictions on take, import, export, and commercial trade of oceanic whitetip sharks, are expected to place an undue burden on private actors. Many of the ESA section 9(a)(1) prohibitions extended to the oceanic whitetip shark are for activities already prohibited by federal, state, or territorial law (e.g., retention of the species in commercial fisheries, sale of fins). Thus, the alternatives are expected to reinforce existing regulations, decrease the number of fisheries interactions, and to decrease synergistic, negative effects from other stressors.

The current environmental conditions for the oceanic whitetip shark discussed in the Biological Environment section of this document states NMFS' determination that, when considering the combined effects of past and ongoing federal, state/territorial, and local activities, the global oceanic whitetip population is declining and is likely to become endangered within the foreseeable future. Therefore, the implementation of Alternatives 2 or 3 on top of the current baseline would be expected to have a beneficial impact on the species because these alternatives are expected to reduce the synergistic stress effects of activities adversely affecting the status of the species. All of the alternatives except the No-action Alternative would affirmatively contribute to the conservation of the oceanic whitetip shark. Additionally, avoiding and reducing impacts to the oceanic whitetip shark also has the potential to limit the effects of federal actions on other affected species in the federal action area, for instance, other pelagic species that are frequently bycaught in PLL fisheries.

5.8 Conclusions and Comparison of Alternatives

This section provides a summary of the impacts of implementing each alternative. NMFS prefers Alternative 2 because the exceptions to certain prohibitions included in this alternative would contribute to the conservation of the oceanic whitetip shark. These excepted activities would be beneficial to the species, and NMFS believes these activities would be hindered or less effective in the absence of the exceptions. Scientific research activities improve our understanding of the status of and threats facing the oceanic whitetip shark, and provide critical information for

assessing the effectiveness of current and future management practices. Additionally, the costs of implementing this preferred alternative (i.e., federal action agency and permittee costs associated with implementing imposed RPMs) and impacts to fisheries and other affected industries are expected to be minor, whereas the benefits to the socioeconomic environment are expected to be greater than those of the other alternatives (see section 2.5.2 of Appendix A).

NMFS does not prefer Alternative 3 because this alternative would be expected to have less net beneficial impacts on the oceanic whitetip shark. Alternative 3 does not include exceptions from the prohibitions for scientific research or law enforcement activities. Not including exceptions for these activities may deter or delay research that would improve our understanding of the status and risks facing the species and provide critical information for assessing the effectiveness of current and future management practices.

6.0 BIBLIOGRAPHY

80 FR 81194. Final Rule to Establish a Single Small Business Size Standard for Commercial Fishing Businesses.

89 FR 278. 2024. Atlantic Highly Migratory Species; Final Rule Prohibiting Retention of Oceanic Whitetip Sharks in U.S. Atlantic Waters and Hammerhead Sharks in the U.S. Caribbean Sea.

Andrzejaczek S., Gleiss A.C., Jordan L.K., Pattiaratchi C.B., Howey L.A., Brooks E.J. and Meekan M.G., (2018) Temperature and the vertical movements of oceanic whitetip sharks, *Carcharhinus longimanus*. Nature Scientific reports, 8(1), pp.1-12.

Backus R.H., Springer S. and Arnold Jr. E.L. (1956) A contribution to the natural history of the white-tip shark, *Pterolamiops longimanus* (Poey). Deep-sea Research, 3, 178-188.

Bonfil R., Clarke S. and Nakano H. (2008) The biology and ecology of the oceanic whitetip shark, *Carcharhinus longimanus*. In: Sharks of the Open Ocean: Biology, Fisheries, and Conservation. M.D. Camhi, E.K. Pikitch and E.A. Babcock (eds): Blackwell Publishing. pp. 128139.

Brame A., NMFS SERO, Personal communication (2023).

Convention on International Trade in Endangered Species of Wild Fauna and Flora (2023) Trade Database.

Compagno L.J.V. (1984) FAO Species Catalogue. Vol 4. Sharks of the world: an annotated and illustrated catalogue of shark species known to date. Parts 1 and 2. FAO Fisheries Synopsis No. 125. FAO, Rome, Italy. p. 655.

Ebert D.A., Fowler S., Compagno L.J.V. (2013) Sharks of the World: A Fully Illustrated Guide. Plymouth, UK: Wild Nature Press.

Howey-Jordan L.A., Brooks E.J., Abercrombie D.L., Jordan L.K.B., Brooks A., Williams S., Gospodarczyk E. and Chapman D.D. (2013) Complex Movements, philopatry and expanded depth range of a severely threatened pelagic shark, the oceanic whitetip (*Carcharhinus longimanus*) in the western North Atlantic. PloS one, 8, 1-12.

Inter-American Tropical Tuna Commission (IATTC) (2011) Resolution on the Conservation of Oceanic Whitetip Sharks Caught in Association with Fisheries in the Antigua Convention Area.

Inter-American Tropical Tuna Commission (2023) Vessel Register.

International Commission for the Conservation of Atlantic Tunas (ICCAT) (2010) Recommendation by ICCAT on the Conservation of Oceanic Whitetip Shark Caught in Association with Fisheries in the ICCAT Convention Area.

International Commission for the Conservation of Atlantic Tunas (2023) Record of Vessels.

Mather F.J. and Day C.G. (1954) Observations of pelagic fishes of the tropical Atlantic. Copeia, 1954, No. 3, 179-188.

Musyl M.K., Brill R.W., Curran D.S., Fragoso N.M., McNaughton L.M., Nielsen A., Kikkawa B.S. and Moyes C.D. (2011) Postrelease survival, vertical and horizontal movements, and thermal habitats of five species of pelagic sharks in the central Pacific Ocean. Fishery Bulletin, 109, 341-368.

NMFS (2019) Continued Authorization of the Hawaii Pelagic Shallow-Set Longline Fishery (PIR-2018-10335).

NMFS (2020) Endangered Species Act (ESA) Section 7 Consultation on the Pelagic Longline Fishery for Atlantic Highly Migratory Species.

NMFS (2023) Endangered Species Act Recovery Status Review for the Oceanic Whitetip Shark (*Carcharhinus longimanus*).

NOAA Fisheries (2022a) Fisheries of the United States.

NOAA Fisheries (2022b) Stock Assessment and Fishery Evaluation Report: Atlantic Highly Migratory Species.

NOAA Fisheries (2023) Annual Commercial Landings Statistics.

Osgood G.J., White E.R., Baum J.K. (2021) Effects of climate-change-driven gradual and acute temperature changes on shark and ray species. Journal of Animal Ecology 90:2547-2559.

Papastamatiou Y.P., Iosilevskii G., Leos-Barajas V., Brooks E.J., Howey L.A., Chapman D.D. and Watanabe Y.Y. (2018) Optimal swimming strategies and behavioral plasticity of oceanic

whitetip sharks. Scientific Reports, 8(1), 1-12.

Rigby C.L., Barreto R., Carlson J., Fernando D., Fordham S., Francis M.P., Herman K., Jabado R.W., Liu K.M., Marshall A., Pacoureau N., Romanov E., Sherley R.B. and Winker H. (2019) *Carcharhinus longimanus*. The IUCN Red List of Threatened Species 2019: e.T39374A2911619. https://dx.doi.org/10.2305/IUCN.UK.2019-3.RLTS.T39374A2911619.en.

Tolotti M.T., Bach P., Hazin F., Travassos P. and Dagorn L. (2015) Vulnerability of the Oceanic Whitetip Shark to Pelagic Longline Fisheries. PloS one, 10, e0141396.

Western and Central Pacific Fisheries Commission WCPFC) (2012) Conservation and Management Measure for Oceanic Whitetip Shark.

Western and Central Pacific Fisheries Commission (WCPFC) (2023) Record of Fishing Vessels.

Young C., NMFS PIRO, Personal communication (2023).

Young C.N. and Carlson J.K. (2020) The biology and conservation status of the oceanic whitetip shark (*Carcharhinus longimanus*) and future directions for recovery. Reviews in Fish Biology and Fisheries, 30(2), 293-312.

Young C.N., Carlson J., Hutchinson M., Hutt C., Kobayashi D., McCandless C.T. and Wraith J. (2017) Status review report: oceanic whitetip shark (*Carcharhinius longimanus*). Final Report to the National Marine Fisheries Service, Office of Protected Resources.

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