DRAFT Regulatory Amendment under the Fishery Ecosystem Plan for the Pelagic Fisheries of the Western Pacific Region: Catch and Retention Limits for Striped Marlin within the Western and Central Pacific Fisheries Commission Convention Area North of the Equator

Draft Environmental Assessment
Including a Regulatory Impact Review

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Abstract

Western and Central North Pacific Ocean (WCNPO) striped marlin, caught within the Western and Central Pacific Fisheries Commission (WCPFC) Convention Area and north of the equator, is experiencing overfishing. The Western Pacific Fishery Management Council (Council), at its 193rd meeting on December 6 to 8, 2022, considered alternative management options for U.S. fisheries for this stock. A proposed rule to promulgate a previously preferred alternative was withdrawn by NMFS because the purpose in need in the previous Council action is moot given the stock status of no longer overfished under the Council's adopted status determination criteria. The previous purpose and need addressed the Council's obligation to end international overfishing. However, the Council may still consider taking action to implement a catch limit to prevent overfishing and sustain long-term viability of the resource. It may also take action to implement the WCPFC catch limits defined in Conservation and Management Measure (CMM) 2024-06 adopted in December 2024 (WCPFC 2024). There are five Alternatives for Council consideration, setting catch limits for WCNPO striped marlin in 2025, 2026, and 2027:

Alternative 1, the no action or status quo alternative, would not set a retention limit for WCNPO striped marlin.

Alternative 2, (Councils' previously preferred alternative in a withdrawn action)**,** would set a catch limit of 457 metric tons (t) t and a longline retention limit of 443 t , for years 2025-2027, consistent with the now CMM 2010-01, which is no longer in force.

Alternative 3, would set a catch limit consistent with CMM 2024-06 of 393.4 t and a longline retention limit of 381.5 t for 2025–2027, subject to reduction in 2026 and 2027 based on both U.S. and total international catch of WCNPO striped marlin, For analysis purposes, this reduction could result in a catch and retention limits no lower than 228.4 t and 221.5 t, respectively, consistent with the lowest U.S. catch limit defined in CMM 2024-06 for 2026 & 2027.

Alternative 4 would prohibit retention of WCNPO striped marlin (a retention limit of 0 t) for 2025–2027.

Under any option, there would be no change in the operation of longline fisheries in terms of location, target and non-target species, catch, effort, fisher participation, gear composition, seasonality, intensity, or bycatch. It is anticipated that striped marlin catches will be lower than the retention limit in most years.

How to Comment

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ACRONYMS AND ABBREVIATIONS

B	Biomass
BE	Biological Evaluation
BiOp	Biological Opinion
CMM	Conservation and management measure
CNMI	Commonwealth of the Northern Mariana Islands
Convention	Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean
Council	Western Pacific Fishery Management Council
DSLL	deep-set longline
DPS	Distinct population segment
EA	Environmental assessment
EEZ	Exclusive economic zone
EFH	Essential fish habitat
EPO	Eastern Pacific Ocean
ESA	Endangered Species Act
F	Fishing mortality
FEP	Fishery ecosystem plan
FMP	Fishery management plan
FR	Federal Register
HAPC	Habitat areas of particular concern
HI	Hawaii
HMS	highly migratory species
IATTC	Inter-American Tropical Tuna Commission
IFKW	insular false killer whale
ISC	International Scientific Committee for Tuna and Tuna-Like Species in the North Pacific Ocean
ITS	Incidental take statement
lb	Pound(s)
LRP	Limit reference point
LVPA	large vessel prohibited area
M	Natural mortality rate
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MCP	Marine Conservation Plan
MHI	Main Hawaiian Islands
MFMT	Maximum fishing mortality threshold
MMPA	Marine Mammal Protection Act
MPA	marine protected area
MSST	Minimum stock size threshold
MSY	Maximum sustainable yield
MUS	Management unit species
M&SI	Mortalities or serious injuries
NEPA	National Environmental Policy Act
NEPO	Northeast Pacific Ocean
nm	Nautical mile(s)
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NS	National Standard

NWHI	Northwestern Hawaiian Islands
OLE	Office of Law Enforcement
PBR	Potential biological removal
PIFSC	Pacific Islands Fisheries Science Center
PIRO	Pacific Islands Regional Office
PRIA	Pacific Remote Island Areas
PT	Participating Territory
RA	Regional Administrator
SB	spawning biomass
SC	Scientific Committee of the WCPFC
SDC	status determination criteria
SEZ	southern exclusion zone
SIDS	Small Island Developing States
SPC	Secretariat of the Pacific Community
SSB	spawning stock biomass
t	Metric ton(s)
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
WCNPO	Western and Central North Pacific Ocean
WCPFC	Western and Central Pacific Fisheries Commission
WCPO	Western and Central Pacific Ocean
WP SFF	Western Pacific Sustainable Fisheries Fund
WPFMC	Western Pacific Fishery Management Council

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1 INTRODUCTION

1.1 Background Information

The National Marine Fisheries Service (NMFS) and the Western Pacific Fishery Management Council (Council) manage U.S. vessels fishing for pelagic management unit species (PMUS) in Federal waters (3-200 nautical miles (nm) from shore) around American Samoa, Guam, the Commonwealth of the Northern Mariana Islands (CNMI), and Hawaii, and on the high seas (waters > 200 nm from shore). The management of these PMUS is documented in the Fishery Ecosystem Plan for Pelagic Fisheries of the Western Pacific Region (Pelagics FEP) as authorized by the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act; 16 U.S.C. § 1801 et seq.).

Under the Magnuson-Stevens Act, the U.S. cooperates with or through international management organizations to promote management of international highly migratory species (HMS) across their entire range. In the Pacific Ocean, two Regional Fisheries Management Organizations (RFMOs), the Inter-American Tropical Tuna Commission (IATTC) and the Western and Central Pacific Fisheries Commission (WCPFC), manage fisheries for HMS, such as striped marlin. Individual RFMO member states are responsible for implementing the requirements of RFMO resolutions or measures under domestic regulations for their fisheries and vessels flying their flag. The United States is a member of both the IATTC and WCPFC.

The WCPFC is the responsible body for managing the striped marlin stock that this action will focus on, the western central north Pacific stock (WCNPO). Congress implemented U.S. membership to the WCPFC through the WCPFC Implementation Act (WCPFCIA; P.L. 109-479). As a signatory to the Convention for the Conservation and Management of HMS Stocks in the Western and Central Pacific Ocean (WCPFC Convention), the United States is one of over 40 other member countries, cooperating non-members, and participating territories (CCMs). For the purpose of WCPFC membership, the United States is a member while the U.S. territories of American Samoa, Guam, and CNMI are each considered a participating territory (PT). The primary responsibility of the WCPFC is to develop and agree upon Conservation and Management Measures (CMM) for HMS caught by fisheries in the WCPFC Convention Area, such as striped marlin. The WCPFC Convention Area is generally the western Pacific Ocean west of 150° W (Figure 1).

For U.S. Fisheries, striped marlin (*Kajikia audax*) is managed as a PMUS under the Pelagics FEP, and is primarily caught on deep-set longline gear with occasional landings on shallow-set longlines, troll, and handline gear. These fisheries primarily target tuna or swordfish, but will often retain striped marlin when caught as a non-target species due to its economic value. Although the Pelagics FEP indicates that PMUS have statutory exemptions from annual catch limits (ACLs), the Magnuson-Stevens Act authorizes the Council to determine ACLs or other catch limits for PMUS if such actions are deemed appropriate and consistent with the Magnuson-Stevens Act and other statutory mandates.

The WCPFC previously adopted CMM 2010-01 based on results of a 2007 stock assessment for the North Pacific striped marlin developed by the International Scientific Committee for Tuna and Tuna-like species in the North Pacific Ocean (ISC) in response to the status of North Pacific striped marlin[1]. The stock was subject to fishing mortality above levels sustainable in the long term. Under CMM 2010-01, WCPFC

[1] Striped marlin was originally assessed as a single North Pacific stock prior to adoption of CMM 2010-01. The 2011 stock assessment separated the original stock into two stocks, and assessed only the western and central North Pacific stock (ISC 2011). The 2015 (ISC 2015), 2019 (ISC 2019), and 2023 (ISC 2023a) assessment adopted the same approach.

members agreed to reduce total catch by 20% by 2013. For the United States, this equaled a catch limit of 457 metric tons (t)[2]. This limit referred only to retained catch as the CMM did not specify limits for discarded bycatch. The measure also did not apply to fisheries of Small Island Developing States (SIDS) or PTs, which include the Pacific U.S. participating territories.

The WCPFC adopted a new CMM for WCNPO striped marlin (CMM 2024-06, Appendix I) that sets a catch limit for the United States in 2025, 2026, and 2027. This CMM is based on a 60% reduction from average catches from 2000-2003, or a 50% reduction from the catch limits for CCMs specified in CMM 2010-01. The U.S. catch limit under CMM 2024-06 Paragraph 5 is 228.4 t with additional catch provisions in Paragraph 6 and Footnote 1 of the CMM. Paragraph 6 states up to an additional 165 t can be added to CCM limits contingent on underages reported by other CCMs in the CMM. Footnote 1 to Paragraph 6 in CMM 2024-06 acknowledges that: "*the U.S, based on historical fishing levels, may, for management purposes, presume an underage and the availability of the additional 165t of catch.*" Paragraph 7 of CMM 2024-06 acknowledges an additional catch of 165 t that would be available to CCMs listed in Paragraph 5 for 2025 due to an underage of 826 t in 2023. Additional catches for 2026 and 2027 for CCMs would depend on underages for 2024 and 2025, respectively.

The IATTC does not have a management measure for WCNPO striped marlin, as it does not occur in its convention area.

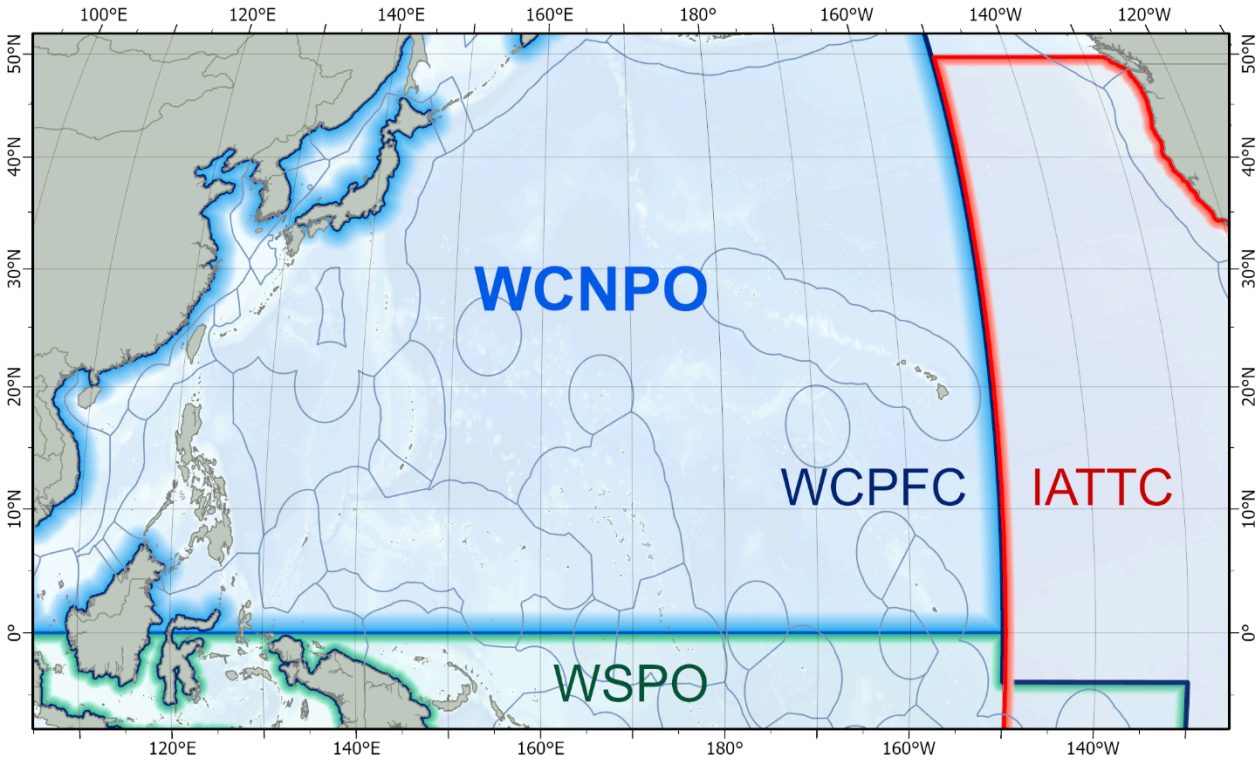

Figure 1. Map of the western Pacific Ocean showing the WCNPO stock boundary (in blue) and Western South Pacific Ocean (WSPO) stock (in green). The WCPFC and IATTC boundaries are shown in black and red lines, respectively.

[2] Each CCM, or members of the WCPFC, established their catch limits under CMM 2010-01 by reducing their highest reported catch from 2000-2003 by 20%. For the U.S., the highest catch at the time was 571 t; a 20% reduction equaled 456.8 t, rounded to 457 t.

Stock assessments for the WCNPO stock of striped marlin occurred in 2011, 2015[3], 2019, and 2023. The 2023 assessment was prepared by the ISC and used 1977 to 2020 fisheries data from the United States, Japan, Taiwan, and other nations with reported landings of WCNPO striped marlin. The assessment concluded that the WCNPO striped marlin continued to be both overfished and experiencing overfishing, relative to WCPFC stock status determination criteria (SDC), meaning that the stock biomass is too low and fishing mortality is too high to be sustainable (Table 1; ISC, 2023). Results of the 2023 assessment relative to those WCPFC are summarized in Table 1 and Figure 2. However, under domestic SDC, the 2023 stock assessment indicates that the stock is no longer overfished, is rebuilding, but is still subject to overfishing (September 5, 2024 NMFS Status Determination Decision Memo).

The WCPFC, in recognition of the status of the stock, adopted an interim rebuilding plan at its 16th Regular Session in December 2019 (WCPFC 2020) with the following terms:

- A rebuilding target of 20% of spawning stock biomass (SSB) in absence of fishing (20% $SSB_{F=0}$);
- Rebuilding should be complete by 2034; and
- Catch and effort levels will be based on a 60% probability of reaching the target within the rebuilding period.

The interim rebuilding plan did not define any catch reductions or limits to achieve the rebuilding goal, but highlighted that the rebuilding objective would be subject to further consideration and. The WCFPC has not updated the catch limits defined in CMM 2010-01. Instead, the new CMM 2024-06 (as provided in Appendix 1) replaced CMM 2010-01 and assigned catch limits that would manage the stock toward the rebuilding target. The ISC is to evaluate the efficacy of the new CMM 2024-06 in 2025 and assess the stock in 2027. CMM 2024-06 is applicable through 2027.

Table 1. Summary of the 2023 benchmark stock assessment of WCNPO striped marlin relative to WCPFC stock determination criteria, including definitions of different stock assessment statistics (ISC 2023).

Statistic	Value	Notes	Status
F_{2020}	0.58	Fishing mortality, or rate at which fish stock is caught	
$F_{2018\text{-}2020}$	0.68	Average fishing mortality from 2018-2020	
F_{MSY}	0.63	Fishing mortality for MSY	
$SPR_{2018\text{-}2020}$	0.17	Spawning potential ratio to produce MSY	
$SSB_{2018\text{-}2020}$	1,359 t	Spawning stock biomass in 2	
SSB_{MSY} or B_{MSY}	2,920 t	Spawning stock biomass for MSY	
20% $SSB_{F=0}$	3,660 t	Rebuilding target; based on what 20% of the SSB would be if there was no fishing mortality	
$F_{20\%SSB(F=0)}$	0.53	Rebuilding target; fishing mortality rated need to reach 20% $SSB_{F=0}$	
$SSB_{2018\text{-}2020}/SSB_{MSY}$	0.47	A value less than one means that the stock biomass is too low	Overfished
$F_{2018\text{-}2020}/F_{MSY}$	1.09	A value greater than one means that the fishing mortality is too high	Overfishing Occurring

[3] Details on the 2011 and 2015 stock assessments can be found in section 3.1.1.; both found the stock of striped marlin to be overfished and experiencing overfishing.

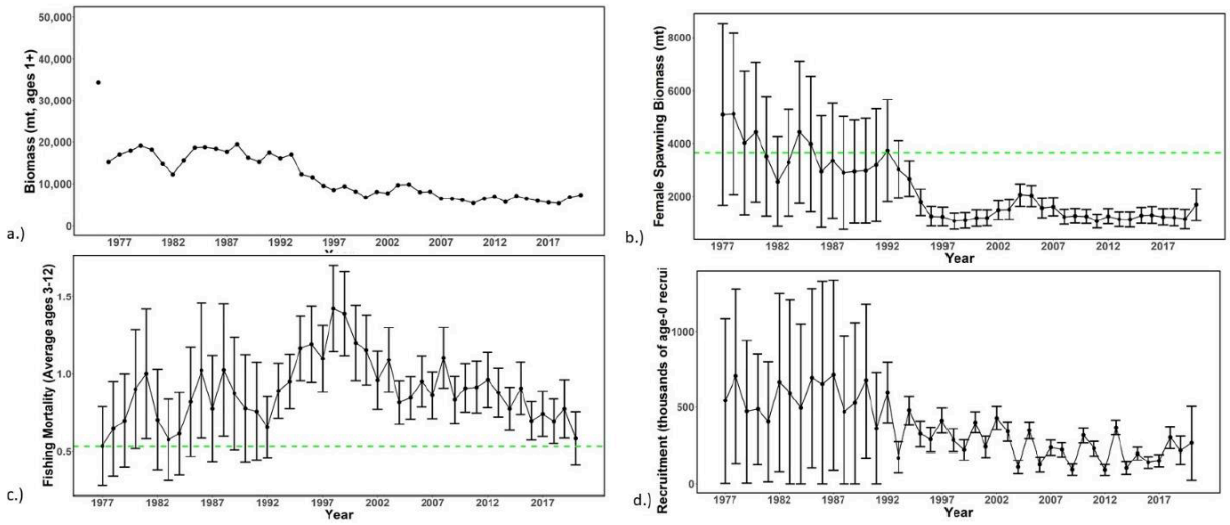

Figure 2. Estimates of: (a) population biomass (age 1+), (b) spawning biomass, (c) instantaneous fishing mortality (average for age 3-12, year-1), and (d) recruitment (age-0 fish) for Western and Central North Pacific striped marlin (*Kajikia audax*) from the 2023 stock assessment. The circles represents the maximum likelihood estimates by year for each quantity and the error bars represent the uncertainty of the estimates (95% confidence intervals), green dashed lines indicate the dynamic 20%SSBF=0 and F20%SSBF=0 reference point.

At its 193rd meeting in December 2022**,** the Council recommended a catch limit and a retention limit to address the U.S. fleet's relative impact on the internationally overfished striped marlin stock in the WCNPO. This recommendation was in response to Magnuson-Stevens Act section 304(i) requirements for the United States to address the relative impact of domestic fisheries on an internationally managed stock that was overfished as a result of international fishing pressure. Council recommended and NMFS proposed a catch limit of 457 t of WCNPO striped marlin for all U.S. Fisheries managed under the FEP, and a retention limit of 443 t for Hawaii limited entry longline fisheries. Under the proposed rule, if the retention limit was projected to be reached, retention of striped marlin caught within the WCNPO by Hawaii longline fisheries would be prohibited for the remainder of the calendar year. With the September 5, 2024 determination (NMFS 2024) that the stock was no longer overfished relative to domestic status determination criteria (SDC), NMFS withdrew the proposed rule on November 5, 2024, (89 FR 87838) as the requirements of Magnuson-Stevens Act section 304(i) no longer applied to the stock.

1.2 Proposed Action

The Council is considering a regulatory amendment which will implement a catch and retention limit to address the relative impact of U.S. vessels on this stock. As indicated in the Pelagic FEP, stocks under international agreements are exempt from Section 303(a)(15) of the Magnuson-Stevens Act requiring implementation of annual catch limits; however, the Council may specify catch limits for any management unit species identified in the Pelagic FEP. The Pelagic FEP specifies a process for defining annual catch limits (ACLs) and accountability measures (AMs) which includes definition of maximum sustainable yield, an overfishing limit, and a reduction of that limit to account for uncertainty. Magnuson-Stevens Act 303(a)(1)(A) indicates that any fishery management plan prepared by any Council, or by the Secretary, shall contain measures necessary and appropriate for the conservation and management of the fishery to prevent overfishing and rebuild overfished stocks. The catch limits defined

in CMM 2024-06, although not developed strictly following the ACL specification approach defined in the Pelagic FEP, will prevent overfishing and are projected to rebuild this internationally managed stock, consistent with Magnuson-Stevens Act 303(a)(1)(A).

In the Pacific Ocean, RFMOs manage fisheries for highly migratory species (HMS), such as striped marlin, by adopting consensus resolutions or measures. Individual RFMO member states are responsible for implementing the requirements of resolutions or measures under domestic regulations for their fisheries and vessels flying their flag. Striped marlin stocks are managed through the Inter-American Tropical Tuna Commission (IATTC) and WCPFC, of which the United States is a member of both.. The WCPFC is the responsible body for managing the WCNPO striped marlin.

Congress implemented U.S. membership to the WCPFC through the WCPFC Implementation Act (WCPFCIA; P.L. 109-479). As a signatory to the Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (Convention), the United States is a member of WCPFC, along with over 40 other member countries, cooperating non-members, and participating territories. The primary responsibility of the WCPFC is to develop and agree upon conservation and management measures (CMMs) for highly migratory species (HMS) caught by fisheries in the WCPFC Convention Area, including striped marlin. The WCPFC Convention Area is generally the western Pacific Ocean to 150° W (Figure 1), while the Western and Central Pacific Ocean (WCPO) refers to the western Pacific Ocean to 150° W. For the purpose of WCPFC membership, the United States is a cooperating member while the U.S. territories of American Samoa, Guam and the Commonwealth of the Northern Mariana Islands (CNMI) are each considered a participating territory (PT).

Section 505 of the WCPFCIA (16 U.S.C. § 6901, et seq.) authorizes the Secretary of Commerce (Secretary) to implement regulations adopted by the WCPFC under the authority of the WCPFCIA. Specifically, the act authorizes the Secretary, in consultation with the Secretary of State and, with respect to enforcement measures, the secretary of the department in which the U.S. Coast Guard is operating, to promulgate such regulations as may be necessary to carry out the United States' international obligations under the WCPFC Convention, including recommendations and decisions adopted by the RFMO. In cases where the Secretary has discretion in the implementation of one or more measures adopted by the RFMO that would govern fisheries under the authority of a regional fishery management council, the Secretary may, to the extent practicable within the implementation schedule of the WCPFC Convention and any recommendations and decisions adopted by the RFMO, promulgate such measures in accordance with the procedures established by the Magnuson-Stevens Act.

The WCPFC has developed and agreed on several CMMs for fisheries in the WCPO since its 1st Regular Meeting in 2004. These CMMs include catch and effort limits, requirements for vessel monitoring systems, observer coverage, high seas boarding and inspection, and at-sea transshipment.

As detailed previously (*Section 1.1*), there are also CMMs and agreements related to WCNPO striped marlin. The catch limits defined in CMMs 2010-01 and 2024-06 do not apply to fisheries of Small Island Developing States (SIDS) or Participating Territories (PT), which includes the U.S. participating territories. The IATTC does not have a management measure for WCNPO striped marlin, which only occurs in a small portion of its convention area.

At its 16th Regular Session in December 2019, in recognition of the status of the stock as reported by the ISC (2019), the WCPFC adopted the following interim rebuilding plan (WCPFC 2020) with the following terms:

- a rebuilding target of 20% of spawning biomass in absence of fishing (20% $SSB_{F=0}$),
- rebuilding should be complete within a 15 year horizon, by 2034, and

- catch and effort levels will be based on a 60% probability of reaching the target within the rebuilding period.

The plan contained no specific management strategies to achieve these rebuilding objectives, although the need for development and adoption of those specifics was noted for future WCPFC meetings.

At its 21st Regular Session in December 2024, the WCPFC adopted CMM 2024-06, which set catch limits for five CCMs from 2025 to 2027, including the United States. Total aggregated catches in CMM 2024-06 are consistent with a total catch as analyzed by the ISC that will rebuild the stock within the timeline of the 2019 rebuilding plan. CMM 2024-06 set a catch limit of 228.4 t of striped marlin U.S.-flagged vessels within the WCPFC Convention Area, plus up to an additional 165 t, or 393.4 t. The CCM indicates that the United States may presume, according to Footnote 1 in the CMM, that 165 t of additional catch would be available for management purposes. The Council may decide to implement catch limits consistent with CMM 2024-06.

1.3 Purpose and Need for Action

The purpose of this action is to manage the U.S. catch of WCNPO striped marlin while minimizing adverse economic impacts to the affected fisheries and sustaining long-term viability of the fishery resource. Although the FEP provides a statutory exemption from annual catch limits for this stock, the need for this action is to ensure that domestic management addresses ongoing international overfishing of the stock and promotes stock rebuilding.

This action is consistent with Magnuson-Stevens Act (MSA) Section 303(a) and shall (303(a)(1)) contain the conservation and management measures, applicable to foreign fishing and fishing by vessels of the United States, which are (303(a)(1)(A)) necessary and appropriate for the conservation and management of the fishery to prevent overfishing and rebuild overfished stocks, and to protect, restore, and promote the long-term health and stability of the fishery.

1.4 Action Area

The action area for domestic implementation of catch and retention limits is the stock boundaries of WCNPO striped marlin, i.e., north of the equator and west of 150^0 W longitude (Figure 1), for any domestic fishing vessels, excluding vessels from U.S. participating territories, that fish for, possess, or transship PMUS, or land PMUS within the states, territories, commonwealths, or unincorporated U.S. island possessions in the western Pacific region.

1.5 Decision(s) to be Made

The Council could direct staff, working with NMFS in an Action Team, to develop a regulatory amendment that will implement a catch and retention limit forU.S. vessels on WCNPO striped marlin. As described previously, stocks under international agreements are exempt from Magnuson-Stevens Act section 303(a)(15) requiring implementation of annual catch limits (ACL); instead, Section 303(a)(1)(A) provides the flexibility for the Council to set catch limits where deemed necessary for the sustainability of the stock and consistent with any international agreements.

1.6 List of Preparers

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1.7 NEPA compliance

This Environmental Assessment (EA) is being prepared using the 2020 Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) Regulations. The effective date of the 2020 CEQ NEPA Regulations was September 14, 2020, and reviews begun after this date are required to apply the 2020 regulations unless there is a clear and fundamental conflict with an applicable statute. 85 Fed. Reg. at 43372-73 (§§ 1506.13, 1507.3(a)).

1.8 Public Involvement and Past Council Action

The Council, at its 161st meeting in 2014, recommended the annual catch limit of 457 t of WCNPO striped marlin for U.S. fisheries in response to the stock status in the 2011 stock assessment. The Council also recommended a 434 t retention limit for the Hawaii longline fishery (which is 95% of the 457 t limit). If the 434 t limit were to be reached, the Hawaii longline fishery would be prohibited from retaining striped marlin for the remainder of the fishing year, whereas other fisheries would not. This recommendation was initially incorporated into a previously proposed FEP Amendment, which has yet to be finalized.

At its 181st meeting (March 2020), the Council recommended that NMFS include any new projections with phased catch reductions in any proposal for North Pacific striped marlin to the WCPFC due to the 2019 stock assessment showing no improving stock conditions. Previous projections in the stock assessment implemented constant catch levels over a ten year horizon and there was international debate over recruitment scenarios, therefore phased reductions were recommended to take advantage of the 15 year rebuilding horizon. PIFSC staff provided those projections to Council staff prior to the 183rd Council Meeting.

At its 183rd meeting (September 2020), the Council recommended that phased catch limits (developed by PIFSC) be used as a basis for the WCPFC's U.S. delegation to propose a CMM that would initiate a total allowable catch of striped marlin among all nations in the North Pacific, with a 457 t catch limit by U.S. vessels, consistent with previous Council actions.

At its 184th meeting (December 2020) the Council considered a preferred option for catch and/or effort levels that demonstrably address relative impacts of U.S. fisheries on international overfishing of the North Pacific striped marlin stock and/or recommend other options for consideration and analysis for final action in March 2021.

Public comment on North Pacific striped marlin at the 184th meeting supported the phased approach and subsequent catch limits, but noted the international community may not agree to a rebuilding plan and requested more Options be developed.

Also at the 184th meeting, the Council reviewed a Hawaii Longline Association proposal (on behalf of >90% of permitted Hawaii longline vessels) to phase out steel wire leaders in longline gear for

Hawaii-based longline fisheries. Wire leaders are difficult for sharks and other non-target species to bite off and free themselves and difficult for fishermen to cut from deck height as compared to Option monofilament leaders. Considering this proposal, the Council recommended a comprehensive initiative to reduce interactions and post-hooking mortality of oceanic whitetip sharks, leatherback turtles, billfishes, and other protected species while also addressing associated crew safety issues. The Council then directed its staff to prepare a regulatory amendment to the FEP to evaluate options to prohibit the use of wire leaders in the Hawaii deep-set longline fishery for Council action at its 185th meeting.

At its 185th meeting (March 2021), the Council recognized that there is substantial uncertainty with respect to the relative impact of U.S. vessels on WCNPO striped marlin. This is due in part to uncertainties in foreign catch and discards on the stock, particularly among those WCPFC member fisheries that lack consistent monitoring and catch reporting and have been a leading source of fishing mortality. The U.S. acting unilaterally would not end overfishing of the stock and other WCPFC members have not agreed on an international commitment to reduce impacts on the stock; without reductions in catch limits from the WCPFC, the rebuilding target specified in 2019 will not be reached. The Council further noted its concern over the uncertainty in the BSIA information, although the anticipated benchmark stock assessment in 2023 is expected to address the Council's concerns.

Taking into account BSIA and the associated uncertainties, the Council recommended an Option with a phased approach to accomplish the following:

- Establish an initial catch limit of 457 t for 2022;
- Beginning in 2023, after the anticipated 2022 stock assessment, recommend specified catch limits proportional to stock-wide catch reductions consistent with U.S. obligations that reduce fishing mortality to a rate approaching F_{MSY} and with rebuilding the stock through a phased catch reduction approach; and
- Establish an in-season accountability measure to cease retention and landing of WCNPO striped marlin by U.S. longline fisheries once they have caught 95% of the catch limit.

Regarding the Council's obligations to address international overfishing, the Council requested the State Department and NMFS propose to the WCPFC:

- A measure requiring the use of circle hooks in all WCNPO longline fisheries;
- Development of a standardized billfish catch and discards reporting mechanism for WCNPO longline fisheries; and
- That no member of the WCPFC land and retain more than 500 t of striped marlin per annum by 2025.

Also at the 185th meeting, the Council recommended a regulatory amendment prohibiting wire leaders in the Hawaii deep-set longline fishery and requiring trailing gear removal from oceanic whitetip sharks. The Council took final action on this amendment at its 186th meeting (June 2021). The regulations prohibiting wire leaders went into effect May 31, 2022 (87 FR 25153), and a study by Ward et al. (2008) suggests striped marlin catchability in longline fisheries would be reduced by transitioning from steel wire leaders to nylon monofilament leaders.

Public comment at the 185th meeting reiterated comments made at the 184th meeting on overfishing of WCNPO striped marlin.

At its 193rd meeting (December 2022), the Council revisited its Magnuson-Stevens Act section 304(i) obligation to address the relative impact of U.S. fishing vessels on WCNPO striped marlin stock due to a

delay in the anticipated 2022 stock assessment. The Council recommended NMFS implement Option 2, which is an annual catch limit of 457 t for all U.S. fisheries, and a retention limit of 443 t for vessels with Hawaii limited entry longline permits. If the retention limit is projected to be reached, retention of striped marlin by Hawaii longline vessels would be prohibited for the remainder of the year.

At its 193rd meeting there was public comment to urge Council to, at a minimum, set a catch limit no greater than that proposed under Option 3. This comment cautioned against Option 1 & 2, suggesting that both would allow for an increase in catch. This comment also suggested that Council should consider other options, such as live release.

As described previously (Section 1.1) this Council recommendation was promulgated by NMFS as a Proposed Rule on February 26, 2024 (89 FR 14036) but subsequently Withdrawn on November 5, 2024 (89 FR 87838).

At its 201st meeting (December 2024), the Council took initial action to develop a catch limit to address CMM 2024-06, which had been adopted by the WCPFC one week prior.

2 DESCRIPTION OF THE ALTERNATIVES CONSIDERED

2.1 Development of the Alternatives

In developing the Alternatives for this action, we considered three issues:

- The 2023 striped marlin assessment (ISC 2023a) and phased reduction plan (Brodziak 2024)
- International and domestic management measures applicable to the stock; and
- The Magnuson-Stevens Act 303(a)(1)(A)

For Council and WCPFC consideration, PIFSC developed a phased reduction plan (Brodziak et al. 2024) to achieve the rebuilding goals of the interim plan adopted by the WCPFC in 2019 (WCPFC 2020). The PIFSC plan consisted of three international catch reduction phases bounded by planned stock assessments to allow updated information to inform the plan in the future. The specific reduction amount was modeled to allow for roughly equal catch reductions in each phase and rebuilding was estimated to be achieved according to the Interim Rebuilding Plan – with at least a 60% probability by 2034 – if all applicable member states complied (Brodziak et al. 2024). The phased reduction plan called for average catch from 2018-2020 to serve as a baseline in the first phase, was used to develop Alternatives related to this stock. The phased reduction plan was considered by the WCPFC at their December 2024 meeting, and it informed the adoption of CMM 2024-06.

As described in the introduction, CMM 2024-06 (WCPFC 2024) represents the current international management requirement for the stock, and is consistent with the Interim Rebuilding Plan . The CMM requires the United States to limit catch of WCNPO striped marlin to 228.4 plus up to 165 t, or up to 393.4 t of retained catch annually. The United States striped marlin catch has generally been lower than this level in recent years.. To ensure U.S. fisheries remain compliant with the CMM, and to meet the obligations under the Magnuson-Stevens Act, the Council is acting to establish the WCPFC catch limit in domestic regulations, consistent with the Magunuson-Stevens Act and its implementing regulations.

Initially, CMM 2024-06 was thought to change the basis for WCPFC catch accounting relative to a catch limit for striped marlin from retained catch only to including both retained and discarded catch, whether those discards were alive or dead. This would represent a significant change for catch accounting under the WCPFC, as all other WCPFC catch limits are relative to retained catch only. On careful reading of

CMM 2024-06, it remains consistent with a catch limit relative to retained catch only, with a new provision that requires estimates of the amount of both live and dead discards in addition to catch and effort (CMM Paragraph 13) reported annually. The catch limits specified in CMM 2024-06 are also based on a 60% reduction from highest catch in the 2000–2003 base period, which were limits relative to retained catch.

Catch limits for the United States under CMM 2024-06 could change in 2026 and 2027 based on two factors. First, if the combined catch across all five countries with specific catch limits in the CMM (Japan, Chinese Taipei, Korea, China, and the United States) is less than 2,400 t, the amount of that underage can be made available as additional limit two years later (CMM Paragraph 6). There was a 826 t underage in 2023 (CMM Paragraph 7), of which 165 t (⅕) is available to the United States in 2025 (CMM Paragaph 6). There is no defined mechanism for the division of that additional limit across the five countries named in the CMM, besides a stated preference for countries that would close their fishery as a result of the measure (CMM Paragraph 8). During the Compliance Monitoring Report (CMR) held during the WCPFC Technical and Compliance Committee (TCC) annually in September, adjustments for striped marlin catch limits the following year could be made if limits are exceeded. (Paragraph 12).

In a footnote to Paragraph 6, the CMM includes:

“The United States, based on historical fishing levels, may, for management purposes, presume an underage and the availability of the additional 165mt (sic) of catch.”

The striped marlin limit specified by CMM 2024-06 does not apply to American Samoa-based vessels both because of American Samoa’s status as a participating territory, and those vessels fish south of the equator and catch a different striped marlin stock. However, the Council’s limit would apply to dual permitted American Samoa/Hawaii longline vessels (i.e., U.S. fishing vessels that hold both a Hawaii longline permit and an American Samoa long line permit). These dual permitted vessels are most often based out of Hawaii, and fish north of the equator. Vessels holding solely an American Samoa longline permit would not be subject to this catch limit, nor would longline vessels of CNMI or Guam, given their status as participating territories. There are currently no active longline vessels operating from CNMI or Guam. For the Hawaii longline, handline, and troll fisheries to which the catch limit applies, only striped marlin caught and retained west of 150° W longitude and north of the equator (Figure 1) will count towards the catch limit as this is the WCNPO striped marlin stock boundary.

Accordingly, to address the relative impact of U.S. fishing vessels, we generated an estimate of the U.S. contribution to international catch of WCNPO striped marlin based on recent catch information (Table 2). We used the most recent five years (2016-2020) of catch data from the 2023 stock assessment and the Council’s Stock Assessment and Fishery Evaluation (SAFE) report to estimate the recent U.S. contribution to the retained catch of WCNPO striped marlin applicable to the WCPFC limit. Table 2 provides the international striped marlin catch estimates (ISC 2023). Detailed U.S. striped marlin catch information is presented in the SAFE report for the 2023 fishing year (WPFMC 2024).

The SAFE report presents the total retained striped marlin catch (not including discards) reported to the WCPFC for U.S. and territorial fisheries in SAFE report Table 42 (WPFMC 2024). This table did not include information on what gear-type caught the striped marlin. Because we required estimates of the retained catch of U.S. fisheries by fishery for the striped marlin caught in the WCPFC action area, we calculated the proportions by gear type reported in SAFE report Table A-80. The striped marlin catch presented in the SAFE report Table A-80 shows total catch by gear type, and includes both retained and released catch from the entire Pacific Ocean, not just the WCNPO; additionally striped marlin totals incorporate a proportion of unidentified billfish. We assumed that the total catch by each gear type is

representative of striped marlin catch in the WCNPO, and then used those proportions to calculate WCPFC landings from SAFE report Table 42 into gear-specific groupings. For example, to calculate how much striped marlin was caught by the Hawai'i deep-set longline fishery in the WCNPO area, we first calculated what proportion of total striped marlin catch from the entire Pacific Ocean was compared to what was caught in the WCNPO area. For 2020, WCPFC reported catches in the WCNPO were 83% of all reported U.S. striped marlin catches. This proportion was then applied to Table A-80 for each gear type to determine how much of that catch came from the WCNPO. For the 2020 deep-set longline fishery, the total reported catch was 336 t, and the proportion from WCNPO was 278 t. This allowed us to calculate the average relative percentage of total international catch attributed to U.S. vessels, which from 2016-2020 was 14.8% (Table 2).

In considering Alternatives for this action, we must also scale catches of striped marlin to ensure that we are only considering retained catch of WCNPO striped marlin. For evaluation of future catches relative to the Alternatives described here, we specifically mean estimates of retained WCNPO striped marlin, either developed directly from the catch data obtained from the fishery using both catch location information and catch disposition (retained or released), or by using an average scaling factor described in the previous paragraph in the most recent three years.

Table 2. The total international catch (t) of WCNPO striped marlin and the catch of U.S. vessels, by fleet and the percent of total U.S. catch relative to the total international catch as used in most recent stock assessment.

Year	Total international catch (t)[1]	Deep-set longline catch (t)[2,3]	Shallow -set longline catch (t)[2]	MHI[4] troll and handline catch (t)[2]	MHI[4] troll and handline % all catch[2]	Total U.S. catch (t)[3]	% U.S. catch of WCPFC international catch
2014	2,743	335	11	10	2.9%	357	13.0%
2015	3,271	396	9	9	2.1%	414	12.7%
2016	2,460	307	11	10	3.2%	328	13.3%
2017	2,261	313	12	5	1.5%	330	14.6%
2018	2,180	364	1	9	2.5%	375	17.2%
2019	2,695	447	0	11	2.4%	458	17.0%
2020	2,413	278	1	8	2.7%	287	11.9%
2016-2020 Average	2,402	342	5	9	2.5%	356	14.8%

[1] ISC 2022

[2] WPFMC 2022; scaled to retained catch of WCNPO striped marlin only, see text for more details

[3] Includes catch of both Hawaii and dual-permitted vessels; this action counts dual permitted vessels with Hawai'i vessels for total landings. U.S. catch reports to the WCPFC historically separated Hawai'i and American Samoa catch to mirror bigeye tuna catch attribution.

[4] Main Hawaiian Islands

While the May 2022 regulation prohibiting wire leaders in the Hawaii deep-set longline fishery (87 FR 25153) is intended to reduce post-hooking mortality of the threatened oceanic whitetip sharks, it may impact catch rates of many species that interact with longline gear. A study by Ward et al. (2008) estimated that the transition from wire to nylon monofilament leaders would lead to a decline in striped

marlin catch in longline fisheries of up to 45%, based on limited experimental data from Australia. Although the regulation has applied to the Hawaii deep-set fishery since May 28, 2022, effects for striped marlin in 2022 have yet to be fully analyzed. We expect to see a reduction in the amount of striped marlin retained by U.S. fisheries based on this recent gear change because the Hawaii deep-set longline fleet catches the majority of striped marlin in U.S. fisheries (Table 2). However, we recognize that this reduction may not be enough to achieve management objectives of the Council for this stock.

Differences in the timing of catch reporting across U.S. fisheries in the Alternatives for this action must be considered to make tracking the catch and retention limits in-season possible. Since September 2021, Hawaii longline vessels have been required to submit electronic logs of fishing activity and catch in near-real time (86 FR 42744), allowing for precise and timely in-season accounting of striped marlin catch. Catch data from MHI troll and handline fisheries are not available until at least six months after the end of the fishing year. Due to these reporting lags, in-season catch monitoring of the pelagic MHI troll and handline fisheries is not possible. However, on average, in the most recent 5 years, about 97.5% of striped marlin catch comes from Hawaii longline fisheries whereas about 2.5% of the striped marlin landings are from the Hawaii troll and handline fisheries (Table 2). Therefore, to ensure the catch limits associated with the Alternatives in this action are not exceeded, NMFS and the Council would specify a retention limit equivalent to 97% of the catch limit for applicable Alternatives (i.e., total catch (100%) minus the contribution from troll and handline fisheries (3%). Thus, the retention limits are specific to only WCNPO striped marlin catches monitored in-season from the Hawaii deep- and shallow-set longline fisheries as estimated directly from the available data. This retention limit suggests a larger proportion of the catch limit than indicated in previous actions for the stock (95%) because it reflects the smaller proportion of total catch attributable to troll and handline fisheries in recent years.

Scientific advice for striped marlin from the ISC and WCPFC since 2011 has been inconsistent, with declines in total catch noted in each subsequent assessment but no concurrent reduction in estimated fishing mortality. The2011 stock assessment (Piner et al., 2011) projected catch of 2,500 t would rebuild the spawning stock biomass to 20% $SSB_{F=0}$ by 2017, and be above the spawning stock biomass associated with MSY. The 2015 updated stock assessment (Brodziak et al., 2015) indicated if projected future catches for 2016 to 2020 were, on average, 2,611 t, the stock would be fished at levels commensurate with fishing mortality at MSY (F_{MSY}). While Table 2 indicates that total catches from 2016 to 2020 averaged 2,402 t per year, the 2019 stock assessment projections indicated that this level of catch was still not below F_{MSY}. The 2023 stock assessment (ISC 2023) documented considerable uncertainty, particularly historic catch information and estimates of life history parameters, such as growth, which resulted in uncertainties in assessment outcomes. For this reason, the 2023 assessment suggests that catch should be kept at or below recent catch averages (2018–2020 = 2,428 t). Each stock assessment also indicated a significant increase in fishing mortality relative to F_{MSY} in the years immediately following the prohibition of high seas drift net fishing that phased out high seas drift net fleets, primarily from Asia, by 1992 (NMFS, 2016; Huppert and Mittleman, 1993). Japanese drift net catches, the highest historical source of mortality on the stock, declined precipitously to zero in 1993, but estimates of fishing mortality relative to F_{MSY} have continued to increase. This pattern was noted by the ISC Billfish Working Group in 2020. Uncertainties with metrics for catch to meet rebuilding criteria, combined with additional uncertainties around catch biomass by non-U.S. fisheries, have been a concern to the Council in developing limits and is considered in our analysis of appropriate catch limits for U.S. vessels. Never the less, the 2023 assessment is the best available scientific information (BSIA) for the stock and along with CMM 2024-06, forms the basis for the Alternatives described here.

Given these considerations, we developed four action Alternatives to meet the purpose and need for this action while addressing the uncertainty. In addition to a status quo Alternative with no retention limit for

striped marlin, the action Alternatives consider various catch limits up to a complete prohibition on retention of striped marlin. We use these Alternatives to consider the effects across the full range of possible Alternatives on the human environment, including explicit consideration of the effects of no retained catch of WCNPO striped marlin in U.S. longline fisheries.

2.2 Description of the Alternatives

Regardless of which Alternative is considered, the U.S. longline fisheries would continue to fish in accordance with regulations that limit participation through permits; require electronic reporting of fishing activity and catch, vessel monitoring systems, and observer placement; and require NMFS to monitor and respond to annual catch limits for bigeye tuna or any other PMUS. This action will not change ongoing Council and NMFS management and attribution of catch for bigeye tuna by dual-permitted vessels.

The Alternatives would apply to the following vessels:

- U.S. longline vessels possessing a valid Hawaii longline limited-entry fishing permit fishing within the WCNPO striped marlin stock boundary. This would include all U.S. shallow-set and deep-set longline vessels based in Hawaii and the U.S. West Coast.
- U.S. longline vessels possessing both a valid American Samoa longline permit and a valid Hawaii longline permit (dual-permitted) provided the vessel is fishing on the high seas seaward of the U.S. EEZ around Hawaii in the North Pacific Ocean within the WCNPO striped marlin stock boundary.
- U.S. troll and handline vessels fishing in the WCNPO striped marlin stock boundary. This would include all troll and handline fishing vessels based in Hawaii and potentially troll and handline vessels operating out of ports on the West Coast of the United States.

The proposed action would not affect the following fishing vessels:

- U.S. longline vessels possessing a valid Western Pacific General Permit fishing on the high seas or in the U.S. EEZ around Guam, CNMI, and the PRIA (no active permits since 2013).
- U.S. longline vessels only possessing a valid American Samoa longline fishing permit fishing on the high seas or in the U.S. EEZ around American Samoa.
- U.S. purse seine vessels fishing in the WCPO or EPO.

2.2.1 Alternative 1: No Action (Status Quo/Current Management)

Under Alternative 1, NMFS would not establish a catch limit for WCNPO striped marlin. This Alternative would not meet the purpose and need of addressing the status of the stock and the internationally defined catch limit in CMM 2024-06 t and is only included to allow consideration of an environmental baseline against which the impacts of the action Alternatives may be compared.

Expected Fishery Outcomes

Under Alternative 1, U.S. fisheries would have no limits on the catch of the WCNPO stock of striped marlin, and although the 457 t limit on retained catch would still apply to U.S. fisheries via the WCPFC, there is a chance the U.S. would be found out of compliance with no way to limit catch domestically. There would be no change in the operation of the Hawaii longline fisheries in terms of location, target and non-target species, catch, effort, fishermen participation, gear composition, seasonality, intensity, or bycatch. Overfishing of the stock would likely persist, largely attributed to excessive international fishing pressure.

Although we expect no changes to U.S. fisheries under Alternative 1, the May 2022 regulatory prohibition of wire leaders in the Hawaii deep-set longline fishery (Section 2.1, 87 FR 25153) is expected to result in a reduction in striped marlin catch in future years. Because the expected fishery outcomes of Alternative 1 are used as a baseline against which all other Alternatives are compared, we consider the potential impacts of this measure, which has yet to influence striped marlin catch but is anticipated to do so. We do not have data to suggest how big the reduction in catch might be, thus for the purposes of this EA, we assume that U.S. fishery catches under Alternative 1 will reflect recent year mean catches (Table 2).

During the last five years in the 2019 stock assessment (2013-2017), U.S. landings of striped marlin from the stock averaged about 356 t landed from the WCPFC statistical area (WCPFMC 2022). The most recent five year (2017-2021) average landings were 334 t (WPRFMC 2022), and reached the CMM 2010-01 catch limit of 457 t once in 2019 when adding the dual permit vessel catch with the Hawaii longline catch.

Under this Alternative, we expect that retained catch of WCNPO striped marlin from Hawaii longline and MHI troll and handline fisheries would likely remain below 457 t in most years. While the U.S. would remain compliant with the CMM, there would be no safeguard in place to ensure compliance with the CMM.

2.2.2 Alternative 2: Retention limit of 443 t

Under Alternative 2, the Council would establish a WCNPO striped marlin catch limit (457 t) for both the Hawaii limited entry longline fisheries and the MHI troll and handline fisheries, and a retention limit (443 t) for only the Hawaii longline fisheries for years 2025 to 2027. The catch limit of 457 t was the catch limit under the WCPFC CMM 2010-01 and is not consistent with CMM 2024-06. As described previously, the retention limit is set 3% lower to ensure that total catch of this stock will remain below that catch limit due to the lack of in-season monitoring of catches in the MHI troll and handline fisheries. If, based on logbook, landing, and other available information, that the catch in U.S. longline fisheries would reach the retention limit under Alternative 2, retention of striped marlin by the Hawaii deep-set and shallow-set longline fleet would be prohibited for the remainder of the fishing year.

The catch of striped marlin in the action area by dual-permitted vessels would be counted against the retention limit, and the non-retention provisions would apply to dual-permitted vessels fishing in the action area. Striped marlin catch by dual-permitted vessels would not be attributed to American Samoa because there is no assigned catch limit for striped marlin for the American Samoa Fishery (50 CFR 665.819(a)(1)).

Alternative 2 would not ensure that U.S. catch of striped marlin would remain compliant with WCPFC CMM 2010-06, but would be consistent with CMM 2010-01. Internationally, the WCPFC has established striped marlin catch limits (CMM 2024-06) as consistent with an interim rebuilding plan. The stock is no longer overfished under domestic SDC, but status relative to the interim rebuilding plan targets (WCPFC 2019?) suggest that the stock is still overfished and experiencing overfishing. . Therefore catch limits under CMM 2010-01 would not rebuild the stock as CMM 2024-06 intends to do.

Expected Fishery Outcomes

Under Alternative 2, Hawaii longline fisheries would not retain or land WCNPO striped marlin if the retention limit were projected to be reached. As striped marlin are non-target catch in these fisheries, we expect there would be no change in the operation of the Hawaii longline fisheries in terms of location, target and non-target species, catch, effort, fishermen participation, gear composition, seasonality,

intensity, or bycatch. With the potential for a drop in catchability with the switch to monofilament leaders in the Hawaii deep-set longline fishery, we anticipate that striped marlin catches will be lower than the retention limit under this Alternative in most years. The Hawaii troll and handline fishery (commercial troll and charter fishery combined) typically catch less than 3% of the total U.S. commercial striped marlin. With this Alternative, Council expects that there will be no change in the characteristics of the Hawaii troll and handline fisheries, and catches in these fisheries would therefore be consistent with recent averages.

If the retention limit is projected to be reached, and retention and landing of striped marlin are prohibited in the longline fishery, there would be a loss of revenue and a reduction of supply of this fish to the market. Based on recent average catches of striped marlin, we expect that if this occurred, the prohibition on striped marlin retention would be of a short duration near the end of the calendar year resulting in minimal economic impacts. Given recent average catches in the longline fishery, combined with the previously described anticipated drop in catch rates with the prohibition of wire leaders in the Hawaii deep-set fishery, we predict that the retention limit only very rarely be reached, if at all.

2.2.3 Alternative 3: Catch Limit of 228.4 t, plus an additional catch up to 165 t, Retention limit = 381.5 mt (97% of catch limit)

Under Alternative 3, the Council would establish catch limit of 228.4 t, plus an additional catch up to 165 t for fishing years 2025 through 2027, consistent with CMM 2024-06 (Appendix 1). This Alternative would set a catch limit of 393.4 mt for 2025 and catch limits of 393.4 for years 2026 and 2026, contingent on reported catch underages for other nations in CMM 2024-06 for 2024 and 2025, respectively. CMM 2024-06 acknowledges an underage of 826 t for 2023 which can be applied to 2025 and underages in 2024 and 2025 can be applied to 2026 and 2027. Footnote 1 in CMM 2024-06 states the U.S. may presume an underage and 165 t additional catch to the catch limit provided in the table.

As described for Alternative 1, to address MHI troll and handline fishery catch that is not monitored in-season. A longline retention limit 3% lower than the catch limit (97% of 393.4 t) is defined as 381.5 t funder Alternative 3. Retention and landing of WCNPO striped marlin would be prohibited once the retention limit was reached. Retention limits of 97% would apply against catch limits for 2026 and 2027, which would not exceed 381.5 t.

Alternative 3 would ensure that U.S. catch of striped marlin is compliant with WCPFC CMM 2024-06, would fulfill the need to promote rebuilding of the stock per WCPFC rebuilding plan, and is consistent with the Magnuson-Stevens Act Section 303(a)(1)(A). This Alternative is consistent with the statement in CMM 2026-04 that the United States should assume there is an additional 165 t of catch available for our limit, for management purposes. Alternative 3 would also serve as a clear indication of the United States desire to meet the rebuilding goals as outlined by the WCPFC Rebuilding Plan.

The total catch under CMM 2024-06 is based on a catch projection analyses provided to the ISC (Brodziak, 2024) that would provide a phased step for 2025-2027 toward rebuilding the stock by the 2034 WCPFC rebuilding target. The ISC intends to evaluate CMM 2024-06 in 2025 and assess the stock in 2027, as CMM 2024-06 expires at the end of 2027.

Like the previous action Alternatives, NMFS would attribute catch of WCNPO striped marlin by dual-permitted vessels to the Hawaii longline fleet and thus the non-retention provisions would apply to dual-permitted vessels. WCNPO striped marlin catch by dual-permitted vessels would not be attributed to American Samoa.

<u>Expected Fishery Outcomes</u>

Under this Alternative, U.S. fisheries new catch limit would be 228.4 t of WCNPO striped marlin, plus up to an addition 165 t contingent on catch reported under CMM 2024-06 over the next two years. For analysis purposes, we consider outcomes under the extremes of this alternative, even though the catch limit would be set at 393.4 t. These extremes are a limit of 393.4 t and 228.4 t. Both of these extremes are a significant reduction from the 457 t catch limit (Alternative 2) specified under the previous CMM 2010-01. As striped marlin are non-target catch in these fisheries, we expect there would be no change in the operation of the Hawaii longline fisheries in terms of location, target and non-target species, catch, effort, fishermen participation, gear composition, seasonality, intensity, or bycatch under either extreme. In the most recent five years (2017-2021), U.S. landings of striped marlin from the WCNPO averaged 356 t (WPFMC 2022). The Hawaii troll and handline fishery typically catches less than 3% of the commercial striped marlin compared to the longline catch, and the most recent 5 year average is 2.5%. NMFS does not expect changes to these fisheries as a result of this rule, and expects future catches to be consistent with recent averages.

If the retention limit is exceeded and retention prohibited, as is the case for Alternative 2 impacts, we would expect a market supply loss and loss of revenue for the longline fishery by reducing annual catch and sales of striped marlin. There would be some loss of revenue if a catch limit for 2025 is 393.4 t. Catches in 2024 are anticipated to be larger than recent year averages, and if these most recent catch trends continue, we may reach the catch limit under either extremes of catch limits. We expect significant decline in revenue if catch limits for 2026 and 2027 are below 393.4 t. Losses are intensified without the additional 165 t to an annual catch limit for 2026 or 2027, especially if catches for competing nations under CMM 2024-06 are fully realized. In addition to economic discards and waste, catch limits contingent on competing nations' catch puts the U.S fishery at a competitive disadvantage.

2.2.4 Alternative 4: No retention of WCNPO striped marlin (retention limit = 0)

Under Alternative 4, the Council would prohibit retention of WCNPO striped marlin in the Hawaii longline fisheries. This Alternative represents the strongest longline management measure possible to reduce fishery impacts to the WCNPO striped marlin stock. This Alternative does not meet the purpose and need for the action, but instead provides the opposite of the no-action Alternative to assist with interpretation of the relative impacts of all Alternatives. In addition, this alternative would conflict with the conservation and management objectives of the United States, as outlined in the Ensuring Access to Pacific Fisheries Act (16 USC 6909a). Because no other Alternatives consider prohibitions to retention in the troll and handline fisheries, Alternative 4 also does not.

Expected Fishery Outcomes

As striped marlin are non-target catch in the Hawaii longline fisheries, we expect there would be no change in the operation of these fisheries in terms of location, target and non-target species, catch, effort, fishermen participation, gear composition, seasonality, intensity, or bycatch. Hawaii-based troll and handline fisheries target striped marlin, but because this Alternative would not apply to them, we also expect no changes to those fisheries as well. There would only be small amounts of striped marlin available in the market from troll and handline vessels under this Alternative, and Hawaii longline fisheries would experience a complete loss of revenue from sales of this species. At an average of $2.54/lb in 2021, a complete prohibition on retention would be a loss of approximately $2.0 million annually for the Hawaii longline fisheries in that year. The fisheries would continue to catch this stock as regulatory bycatch, and bycatch mortality is about 52% at haulback; however, this Alternative would reduce total fishing mortality and reduce the impact of U.S. fisheries on the stock.

2.3 Comparison of the Alternatives

The proposed Alternatives cover a wide range of catch limits for Hawaii longline fisheries, from no catch limit to a full retention prohibition on striped marlin (Table 3). Alternative 1 represents no domestic catch or retention limit. For Alternatives 2 and 3, the catch limits proposed are similar, but, based on recent catches, can have different impacts on the fishery overall. Alternative 2 proposes a 443 t retention limit and 457 t catch limit. This is above the 5-year average (356 t), but is below reported landings from one recent year (2019). Alternative 3 proposes a 228.4 t base catch limit which can be increased to up to 393.4 t.

Table 3. Comparison of proposed catch and retention limits across Alternatives.

Attribute	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Catch Limit	None	457 t	228.4 t, plus *up to* an additional 165 t (393.4 t)	0 t
Retention Limit	None	443 t	97% of catch limit	0 t
Economic impact	None	Rare minor economic impacts	Possibility of significant economic loss	Complete revenue loss for striped marlin (~$2M/yr)
Consistency with international management requirements	Inconsistent	Inconsistent with newly adopted measure	Consistent with current newly adopted requirement and international rebuilding plan	Consistent with current requirements

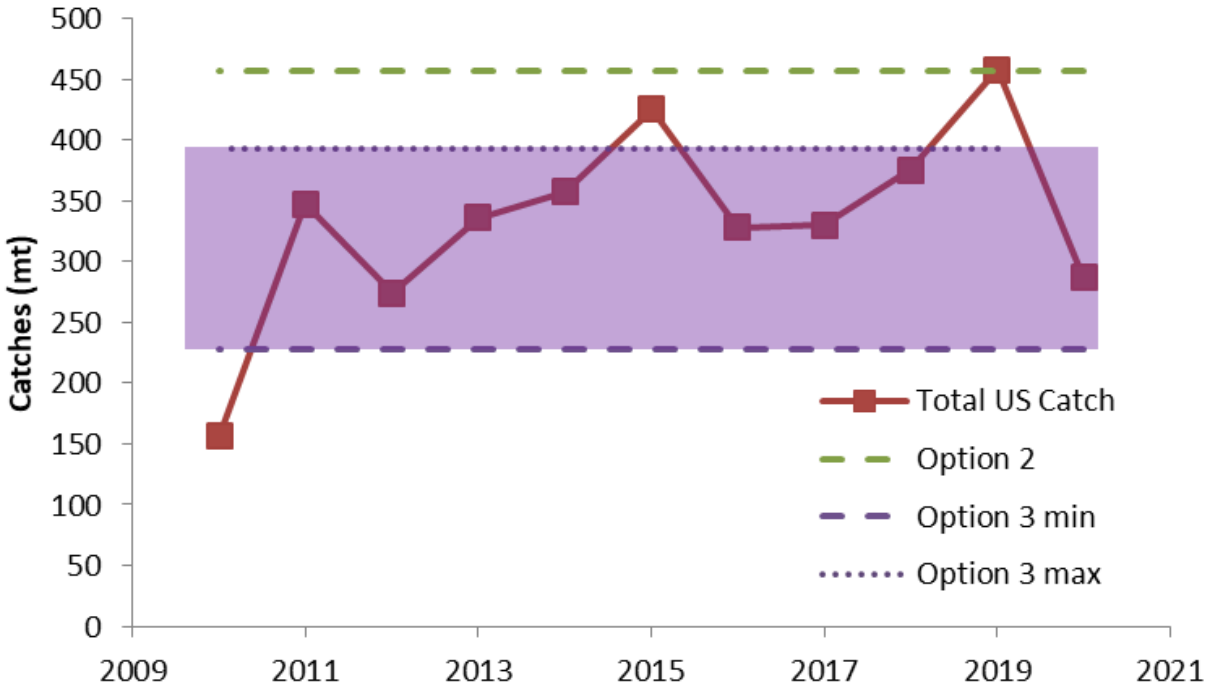


Figure 5 - Comparison of catch levels consistent with Alternatives and historical levels of U.S. catch (2010-2021) from 2023 stock assessment. Shaded purple indicates possible U.S. catch under CMM 2024-06 analyzed in this EA.

2.4 Alternatives Considered, but Rejected from Further Analysis

Other Options considered but rejected from further consideration included area-based management, effort limits, gear restrictions, and requiring releases of striped marlin. Area-based management is not appropriate because there is little evidence to show any current fishing area has a disproportionate impact on the WCNPO striped marlin stock. The Hawaii longline fishery has already been precluded from fishing (i.e., MPAs) in many of its historical fishing areas, and additional area closures would cause unnecessary financial hardship to the fleet that is counter to the need for the action. Effort limits and gear restrictions were rejected from analysis because these would be applicable to the U.S. longline fishery only and may have deleterious impacts on target species catch and fishery economic performance. Such limits would outweigh conservation benefits and be counter to the need for the action.

Lastly, we considered releases of striped marlin brought to longline vessels alive at haulback. Figure 5 (from Brodziak, 2020) summarizes the impact of releasing live fish from longline vessels, using the U.S. Hawaii-based fleet as an indicator for all WCPFC fleets. Live release of striped marlin catch across all international fleets, assuming 48% of striped marlin are alive at haulback as estimated for U.S. longline vessels, would not result in rebuilding of the stock (Figure 5). Live releases would also not meet the purpose and need for the action as it would have economic impacts for the fishery.

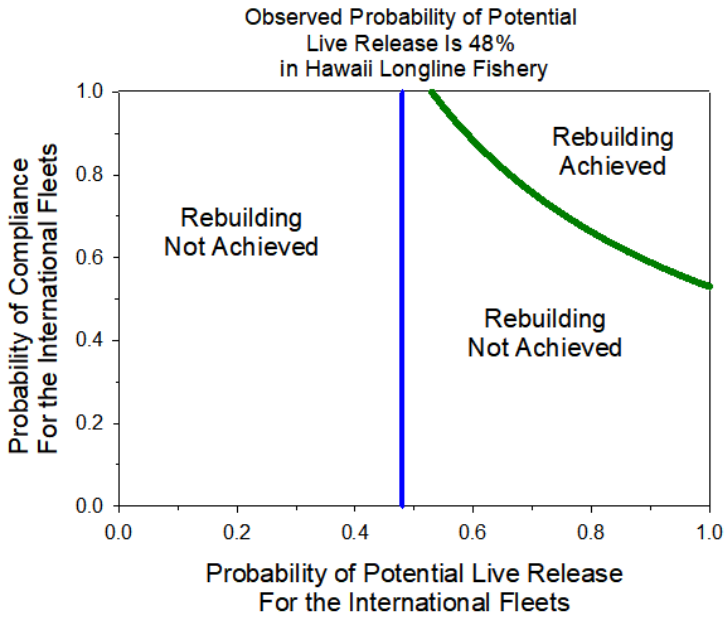


Figure 6. Impact of stock-wide requirements of live releases of WCNPO striped marlin, using estimated post-release mortality and proportion of striped marlin alive at haulback (48%, blue line), estimated for the Hawaii longline fishery. The green line delineates stock recovery, with the zone above achieving rebuild and below not achieving rebuilding.
Source: Brodziak 2020.

3 DESCRIPTION OF THE AFFECTED ENVIRONMENT

This chapter describes the baseline condition of resources in the action area. In identifying the potential effects of this fishery management action, NMFS asks whether and how the Alternatives may change the operation of longline and troll fisheries authorized under the Pelagic FEP to which the action applies. Therefore, the recent operation of these fisheries and their effects on the physical, biological, and human environment form the baseline for comparison of the Alternatives in the next chapter.

Environmental resources that are potentially affected include target species, non-target species, bycatch, protected resources and habitats, and other marine habitat. This chapter also describes fishery participants, fishing communities, and the management setting. NMFS derives the data in this chapter from fisher and observer reports, as required under the Pelagic FEP, and other available information is derived from regional fishery management organizations such as the WCPFC or IATTC.

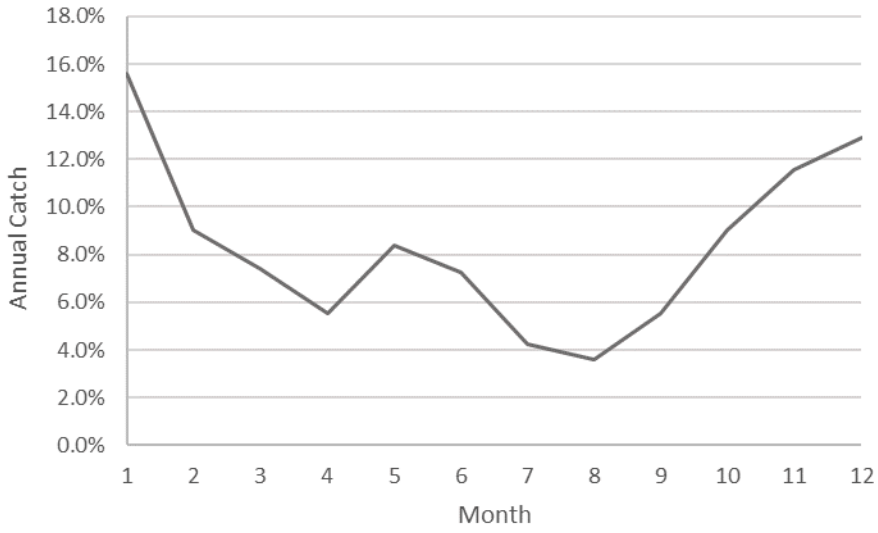
3.1 Target and Non-Target Stocks

3.1.1 Striped Marlin

Information about the striped marlin fishery in the Pacific Islands Region (PIR) is summarized in annual SAFE reports. Striped marlin in U.S. fisheries is most commonly taken by deep-set longline gear, but are also occasionally caught using shallow-set longlines and troll gear (Table 3; WPFMC 2022). U.S. longline vessels in the Western Pacific Region that report catches of striped marlin are based primarily in Hawaii and American Samoa. Of the total combined annual catch of striped marlin in the PIR, U.S. fisheries generally land at least 85% of the landings; American Samoa comprises the reminder of the catch. The

Hawaii fishery has over 140 active vessels that target swordfish with shallow longlines and bigeye tuna with deep longlines. Other catches by the Hawaii fleet include yellowfin tuna, mahimahi, wahoo, blue marlin, opah, and monchong. The American Samoa longline fleet fishes almost exclusively for albacore, which is landed at the cannery in American Samoa. Striped marlin do not make up a large proportion of catch in this fishery, and instead other pelagic species such as other tuna species, wahoo, blue marlin, and mahimahi comprise the majority of other landings. Striped marlin are non-target catch in both American Samoa and Hawaii longline fisheries.

Striped marlin are caught seasonally in the Hawaii longline fisheries, with peak catches from October through January (Figure 7). Catches of striped marlin in Hawaii deep-set & shallow set longline as well as MHI troll and MHI and offshore handline are presented in Table 3. Note that longline catches in Table 3 are the SAFE report values, include both retained and released catch, and do not match the catch information submitted to the WCPFC and used to draft Alternatives for this action.



Source: NOAA Pacific Island Observer Program

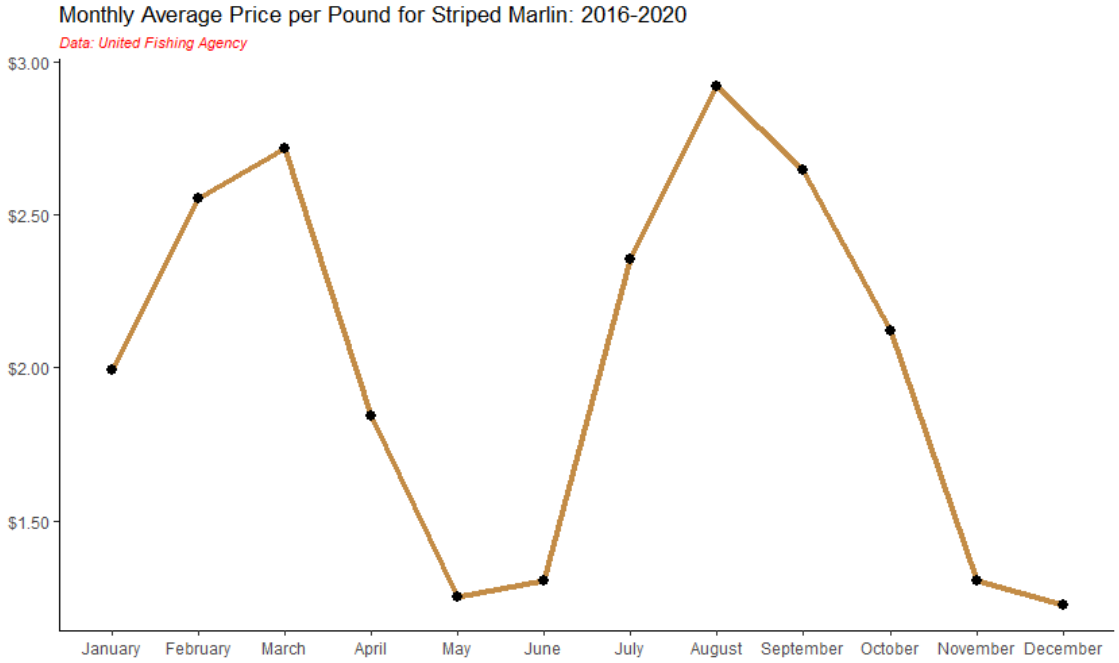
Figure 8. Five year average (2016-2020) percent of annual catch of striped marlin taken by month in the Hawaii deep-set and shallow-set longline fisheries.

Table 4. The total catch of striped marlin for different gear types in the PIR for 2012-2021.

	Striped marlin catch (1,000 lbs)						
Year	Deep-set longline	Shallow-set longline	MHI troll	MHI handline	Offshore handline	Other gear	Total
2012	596	25	25	0	0	2	648
2013	843	35	18	0	0	1	898
2014	908	31	27	1	0	0	967
2015	1,064	24	23	0	0	1	1,112
2016	831	29	27	1	0	0	887
2017	861	34	14	0	0	0	910
2018	1,021	4	26	0	0	1	1,052
2019	1,200	1	29	0	0	1	1,231
2020	738	2	21	0	0	1	762
2021	538	13	19	0	0	1	571
Average	**860.1**	**19.8**	**22.8**	**0.2**	**0.2**	**0.8**	**903.8**
SD	**204.1**	**13.5**	**4.8**	**0.3**	**0.1**	**0.6**	**203.6**

Source: (WPFMC 2022)

Striped marlin are retained as non-target catch due to their economic value. Price per pound fluctuates throughout the year, as shown in Figure 9. On average from 2016-2020, the price per pound peaks in both March and August, with the lowest price in December.



Source: (Pers. Comm.)

Figure 9. Plot of average monthly price per pound of striped marlin from 2016-2020.

Recent Management History

Genetic and tagging studies suggest that striped marlin in the Pacific is comprised of three stocks: southwest Pacific Ocean, WCNPO, and north east Pacific Ocean (NEPO). Stock assessments are available for the WCNPO stock (ISC 2019) and the NEPO stock (Hinton and Maunder 2011). This action is in response to an overfished determination for WCNPO striped marlin from the 2019 stock assessment.

WCNPO

The results of a 2019 stock assessment (ISC 2019) indicate the WCNPO stock of striped marlin continues to be subject to overfishing (F/F_{MSY} is =1.33) and overfished (SSB/SSB_{MSY} = 0.38) in the terminal year of the assessment (2017). Total WCNPO striped marlin (or striped marlin caught in the WCPO) landings in the WCPFC Statistical Area in 2021 by all U.S. and territory fisheries was 229 t, with the U.S. fisheries accounting for 199 t and the American Samoa longline fishery accounting for 30 t. (WPFMC 2022). Overall, the U.S. Fisheries comprise about 12.7% of total international striped marlin landings (Table 2). Overfishing of the stock is primarily due to excessive international fishing pressure.

The 2015 stock assessment also estimated that the North Pacific striped marlin stock was subject to fishing mortality above levels that are sustainable in the long term. The WCPFC adopted CMM 2010-01

for North Pacific striped marlin which required members and cooperating non-members to limit striped marlin landings by all gears from their highest catches from 2000-2003, and then further reduce catches by 10 percent in 2011, 15 percent in 2012, and 20 percent in 2013. Small Island Developing States and Participating Territories (including American Samoa, Guam, and CNMI) were exempt from catch limits under the measure. The highest striped marlin catch by U.S. fisheries between 2000 and 2003 was 571 t. Thus, a 20 percent reduction from 571 t is 457 t. The Hawaii longline fishery accounts for more than 95% of the total U.S. catch of this stock, with the remainder made by Hawaii small-scale troll fisheries.

NEPO

The results of the 2011 stock assessment (Hinton and Maunder 2011) indicate that the NEPO striped marlin stock is not overfished or experiencing overfishing. The stock biomass has increased from a low of about 2,600 t in 2003, and was estimated to be about 5,100 t in 2009. There has been an increasing trend in the estimated ratio of the observed annual spawning biomasses to the spawning biomass (SB) in the unexploited stock, which has doubled from about 0.19 in 2003 to about 0.38 in 2009. The estimated ratio of spawning biomass in 2009 to that expected to provide catch at the level of MSY, SB_{2009}/SB_{MSY}, was about 1.5, which indicates that the spawning biomass was above the level expected to support MSY. The estimated recent levels of fishing effort (average 2007-2009) were below those expected at MSY (Hinton and Maunder 2011). Between 2017 and 2021, Hawaii longline catches of NEPO striped marlin (or striped marlin caught in the EPO) ranged between 21 and 90 t annually, which is no greater than 3 percent of the stock's biomass (WPFMC 2022).

3.1.2 Other Pelagic Management Unit Species

This section identifies and summarizes the PMUS managed under the Pelagic FEP, other than striped marlin, that the longline and troll fisheries of American Samoa, Guam, the CNMI and Hawaii harvest. They include several species of tuna, billfish and sharks shown in Table 4. For a comprehensive discussion of the biology, life history, and factors which affect distribution and abundance of PMUS, see the Pelagic FEP (WPFMC 2009). For detailed information on catch rates over time by species and historical catch information, please reference the 2021 Pelagic FEP SAFE Report.

The Pelagic FEP (WPFMC 2009) includes status determination criteria (SDC), also known as limit reference points (LRPs) for overfishing and overfished conditions. Specifically, overfishing occurs when the fishing mortality rate (F) for one or more years is greater than the maximum fishing mortality threshold (MFMT), which is the fishing mortality rate that produces maximum sustainable yield (F_{MSY}). Thus, if the F/F_{MSY} ratio is greater than 1.0, overfishing is occurring.

A stock is considered overfished when its biomass (B) has declined below the minimum stock size threshold (MSST), or the level that jeopardizes the capacity of the stock to produce MSY on a continuing basis (B_{MSY}). Specifically, the $B_{MSST} = (1\text{-}M)B_{MSY}$, where M is the natural mortality rate of the stock, or one half of B_{MSY}, whichever is greater. For example, if the natural mortality rate of a stock is 0.35, $B_{MSST} = 0.65*B_{MSY}$. Thus, if the B/B_{MSY} ratio for the stock falls below 0.65, the stock is overfished. If a stock has a natural mortality rate greater than 0.6, MSST is set at the default of $0.5*B_{MSY}$ (because 1- 0.6 = 0.4, and 0.5 is greater than 0.4). For such a stock, the stock is overfished when the B/B_{MSY} ratio falls below 0.5. It is important to note that NMFS National Standard 1 guidelines at 50 CFR 665.310(e)(1)(i)(C) defines B_{MSY} as the long-term average size of the stock measured in terms of spawning biomass (SB) or other appropriate measure of the stock's reproductive potential that would be achieved by fishing at B_{MSY}. Thus, whenever available, NMFS will use estimates of SB in determining the status of a stock. When estimates

of SB are not available, NMFS may use estimates of total biomass (B), or other reasonable proxies for determining stock status.

Table 4 shows the stock status of PMUS measured against the SDCs of the Pelagic FEP, based on the most recent stock assessment for the stock at the time of this publication. Section 3.5 describes the NMFS stock status determination process. The current status of the stock represents the best scientific information available regarding the effects of past and present actions on the target and non-target stocks.

For some PMUS, the SDC specified in the FEP differs from the SDC or LRPs adopted by the WCPFC and IATTC. Additionally, in some cases, the LRPs adopted by the WCPFC for a particular stock of fish differs from the LRPs adopted by the IATTC. Finally, in other cases, no stock assessments are available and fishery management organizations must infer stock status from other indicators or not at all. For the purposes of stock status determinations, NMFS uses the SDCs specified in the Pelagic FEP. For a comprehensive discussion of the biology and life history of pelagic MUS, see the Pelagic FEP.

Table 5. Stock status of pelagic management unit species under the FEP.

Stock	Is overfishing occurring?	Is the stock overfished?	Assessment results
Skipjack Tuna (WCPO)	No	No	Castillo Jordan et al. (2022)
Skipjack Tuna (EPO)	No	No	Maunder (2018)
Yellowfin Tuna (WCPO)	No	No	Vincent, et al (2020)
Yellowfin Tuna (EPO)	No	No	Minte-Vera et al. (2020)
Albacore (S. Pacific)	No	No	Castillo Jordan et al. (2021)
Albacore (N. Pacific)	No	No	ISC (2020)
Bigeye Tuna (WCPO)	No	No	Ducharme-Barth et al. (2020)
Bigeye Tuna (EPO)	Yes	No	Xu et al. (2018)
Pacific Bluefin Tuna	Yes	Yes	ISC (2020)
Blue Marlin (Pacific)	No	No	ISC (2021)
Swordfish (WCNPO)	No	No	ISC (2018a)
Swordfish (EPO)	Yes	No	ISC (2022)*ongoing
Striped Marlin WC (N. Pacific)	Yes	Yes	ISC (2019)
Striped Marlin (NEPO)	No	No	Hinton and Maunder (2011)
Blue Shark (N. Pacific)	No	No	ISC (2022)
Oceanic white-tip shark (WCPO)	Yes	Yes	Tremblay-Boyer et al. (2019)
Silky shark (WCPO)	Yes	No	Clarke et al. (2018)
Silky Shark (EPO)	Yes	No	Lennert-Cody et al. (2018)
Shortfin mako shark (N. Pacific)	No	No	ISC (2018c)
Common thresher shark (N. Pacific)	No	No	Teo et al. (2018)
Other Billfishes[1]	Unknown	Unknown	--
Other Pelagic Sharks[2]	Unknown	Unknown	--
Other PMUS[3]	Unknown	Unknown	--

[1]Black Marlin (Pacific), Shortbill Spearfish (Pacific), Sailfish (Pacific)
[2]Longfin Mako Shark (N. Pacific), Bigeye Thresher Shark (N. Pacific), Pelagic Thresher Shark (N. Pacific), Salmon Shark (N. Pacific)
[3]Dolphinfish (Pacific), Wahoo (Pacific), Opah (Pacific), Pomfret (family *Bramidae*, W. Pacific), Kawakawa (Pacific), Oilfish (family *Gempylidae*, Pacific), other tuna relatives *(Auxis* spp., *Allothunnus* spp., and *Scomber* spp, Pacific), Squids (Pacific)

3.2 U.S. Fisheries in the WCPO, including Fisheries of the U.S. Territories

3.2.1 Hawaii and American Samoa Longline Fisheries Catch Statistics

Released catch, retained catch, and total catch for the Hawaii deep-set longline, Hawaii shallow-set longline, and American Samoa longline fisheries in 2021 are summarized in Tables 5, 6, and 7. These and other catch statistics for these three longline fisheries can be found in the 2021 SAFE report (WPFMC 2022).

Table 6. Released catch, retained catch, and total catch for Pelagic Management Unit Species in the Hawaii-permitted deep-set longline fishery, 2021.

	Deep-set longline fishery			
	Released catch	Percent released	Retained catch	Total Catch
Tuna				
Albacore	301	2.4	12,231	12,532
Bigeye tuna	3,462	1.9	183,600	187,062
Bluefin tuna	0	0.0	7	7
Skipjack tuna	177	1.0	17,825	18,002
Yellowfin tuna	2,512	3.1	78,774	81,286
Other tunas	0	0.0	1	1
Tuna PMUS Subtotal	**6,452**	**2.2**	**292,438**	**298,890**
Billfish				
Swordfish	79	1.9	4,034	4,113
Blue marlin	63	1.0	6,184	6,247
Striped marlin	109	1.1	9,538	9,647
Shortbill spearfish	260	2.2	11,313	11,573
Other billfishes	11	1.6	684	695
Billfish PMUS Subtotal	522	1.6	31,753	32,275
Other PMUS				
Mahimahi	250	0.8	29,575	29,825
Wahoo	125	0.4	32,615	32,740
Moonfish	27	0.3	8,305	8,332
Oilfish	2,149	22.2	7,552	9,701
Pomfret	429	1.3	33,686	34,115
Other PMUS Subtotal	**2,980**	**2.6**	**111,733**	**114,713**
Non-PMUS fish	**8,935**	**96.9**	**289**	**9,224**
Total non-shark	**18,889**	**4.2**	**436,213**	**455,102**
PMUS Sharks				
Blue shark	100,076	100.0	0	100,076
Mako sharks	3,192	98.9	37	3,229
Thresher sharks	9,959	99.7	28	9,987
Oceanic whitetip shark	478	100.0	0	478
Silky shark	270	100.0	0	270
Shark PMUS Subtotal	**113,975**	**99.9**	**65**	**114,040**
Non-PMUS sharks	**194**	**100.0**	**0**	**194**
Grand Total	**133,058**	**23.4**	**436,278**	**569,336**

Source: WPRFMC (2022).

Table 7. Released catch, retained catch, and total catch for Pelagic Management Unit Species in the Hawaii-permitted shallow-set longline fishery, 2021.

	Shallow-set longline fishery			
	Released catch	Percent released	Retained catch	Total Catch
Tuna				
Albacore	22	3.5	604	626
Bigeye tuna	39	4.0	934	973
Bluefin tuna	0	0.0	2	2
Skipjack tuna	1	2.1	46	47
Yellowfin tuna	30	2.6	1,131	1,161
Other tunas	0	0.0	0	0
Tuna PMUS Subtotal	**92**	**3.3**	**2,717**	**2,809**
Billfish				
Swordfish	213	3.3	6,285	6,498
Blue marlin	6	6.6	85	91
Striped marlin	7	3.6	185	192
Shortbill spearfish	2	1.9	101	103
Other billfishes	0	0.0	4	4
Billfish PMUS Subtotal	**228**	**3.3**	**6,660**	**6,888**
Other PMUS				
Mahimahi	9	0.7	1,243	1,252
Wahoo	0	0.0	61	61
Moonfish	1	4.2	23	24
Oilfish	50	27.0	135	185
Pomfret	4	10.8	33	37
Other PMUS Subtotal	**64**	**4.1**	**1,495**	**1,559**
Non-PMUS fish	**1**	**100.0**	**0**	**1**
Total non-shark	**385**	**3.4**	**10,872**	**11,257**
PMUS Sharks				
Blue shark	5,392	100.0	0	5,392
Mako sharks	761	96.7	26	787
Thresher sharks	22	91.7	2	24
Oceanic whitetip shark	9	100.0	0	9
Silky shark	3	100.0	0	3
Shark PMUS Subtotal	**6,187**	**99.5**	**28**	**6,215**
Non-PMUS sharks	**5**	**100.0**	**0**	**5**
Grand Total	**6,577**	**37.6**	**10,900**	**17,477**

Source: WPRFMC (2022).

Table 8. U.S. longline catch (t) by species in the WCPFC Statistical Area, 2017-2021.

	U.S. in North Pacific Ocean				
	2021	**2020**	**2019**	**2018**	**2017**
Vessels	137	135	138	136	136
Species					
Albacore, NPO	104	48	88	59	74
Albacore, SPO					
Bigeye tuna	3,750	3,550	3,460	3,393	2,948
Pacific bluefin tuna	1		1		1
Skipjack tuna	128	125	198	105	155
Yellowfin tuna	2,029	1,197	1,556	1,868	1,751
Other tuna					
TOTAL TUNA	**6,012**	**4,920**	**5,304**	**5,425**	**4,928**
Black marlin					
Blue marlin	332	440	747	529	485
Sailfish	9	5	12	9	9
Spearfish	110	94	154	171	205
Striped marlin, NPO	199	240	397	332	280
Striped marlin, SPO					
Other marlins	1	1		1	1
Swordfish, NPO	534	266	510	590	918
Swordfish, SPO					
TOTAL BILLFISH	**1,185**	**1,046**	**1,821**	**1,631**	**1,899**
Blue shark					
Mako shark	1	2	32	36	30
Thresher	1	1	4	2	2
Other sharks					
Oceanic whitetip shark					
Silky shark					
Hammerhead shark					
Tiger shark					
Porbeagle					
TOTAL SHARKS	**1**	**3**	**36**	**38**	**32**

Source: WPFMC (2022).

Table 9. Number of fish kept, released, and percent released for all American Samoa longline vessels in 2020.

Species	Number Kept	Number Released	Total Caught	Percent Released
Skipjack tuna	6,439	59	6,498	0.9
Albacore tuna	38,666	232	38,898	0.6
Yellowfin tuna	10,170	191	10,361	1.8
Kawakawa	0	0	0	0.0
Bigeye tuna	1,136	4	1,140	0.4
Bluefin tuna	1	0	1	0.0
Tunas (unknown)	0	0	0	0.0
TUNAS TOTAL	**56,412**	**486**	**56,898**	**0.9**
Mahimahi	85	0	85	0.0
Black marlin	0	0	0	0.0
Blue marlin	507	13	520	2.5
Striped marlin	99	1	100	1.0
Wahoo	1,399	14	1,413	1.0
Swordfish	50	14	64	21.9
Sailfish	22	4	26	15.4

Species	Number Kept	Number Released	Total Caught	Percent Released
Spearfish	36	44	80	55.0
Moonfish	29	4	33	12.1
Oilfish	26	792	818	96.8
Pomfret	20	361	381	94.8
Pelagic thresher shark	0	0	0	0.0
Thresher shark	0	135	135	100.0
Shark (unknown pelagic)	0	0	0	0.0
Snake mackerel	0	0	0	0.0
Bigeye thresher shark	0	0	0	0.0
Silky shark	0	508	508	100.0
White tip oceanic shark	0	545	545	100.0
Blue shark	0	1,262	1,262	100.0
Shortfin mako shark	0	65	65	100.0
Longfin mako shark	0	0	0	0.0
Billfishes (unknown)	0	0	0	0.0
NON-TUNA PMUS TOTAL	**2,273**	**3,762**	**6,035**	**62.3**
Pelagic fishes (unknown)	0	1	1	100.0
Double-lined mackerel	0	0	0	0.0
Mackerel	0	0	0	0.0
Long-jawed Mackerel	0	0	0	0.0
Barracudas	118	3	121	2.5
Great barracuda	0	0	0	0.0
Small barracudas	0	0	0	0.0
Rainbow runner	0	0	0	0.0
Dogtooth tuna	0	0	0	0.0
OTHER PELAGICS TOTAL	**118**	**4**	**122**	**3.3**
TOTAL PELAGICS	**58,803**	**4,252**	**63,055**	**6.7**

Source: WPRFMC (2021).

3.2.2 Hawaii Troll and Handline fisheries

Released catch, retained catch, and total catch for the Hawaii troll and handline fisheries in 2021 is summarized in Table 9. These and other catch statistics for this fishery can be found in the 2021 SAFE report (WPFMC 2022).

Table 10. Average weight (lb) of the catch of for Pelagic Management Unit Species in Hawaii Troll and Handline Fisheries

	Tunas				Billfish			Other PMUS	
Year	Albacore	Bigeye tuna	Skipjack tuna	Yellowfin tuna	Blue marlin	Striped marlin	Swordfish	Mahimahi	Ono (wahoo)
2012	48.1	23.1	5.2	31.0	259.2	52.9	120.7	12.3	24.4
2013	46.1	23.9	8.6	35.2	257.3	64.7	101.2	12.4	23.9
2014	43.8	24.1	6.7	34.5	245.4	49.5	118.9	12.3	22.0
2015	44.1	21.5	8.1	33.9	170.5	72.9	96.4	13.2	21.7
2016	47.7	20.9	8.4	33.7	145.1	63.1	117.0	12.0	23.0
2017	53.0	24.1	9.1	42.9	175.1	73.7	121.4	11.0	23.1
2018	52.5	25.4	7.9	45.2	193.2	66.6	110.6	11.8	20.5
2019	54.5	22.8	8.9	33.0	150.8	62.2	129.8	12.7	21.0
2020	55.3	28.5	11.9	41.7	126.4	52.9	144.6	12.3	22.3
2021	58.2	26.1	10.1	31.7	151.0	79.2	107.9	12.7	22.1
Average	**50.3**	**24.0**	**8.5**	**36.3**	**187.4**	**63.8**	**116.9**	**12.3**	**22.4**
SD	**5.0**	**2.2**	**1.8**	**5.0**	**49.5**	**9.8**	**14.0**	**0.6**	**1.2**

3.3 Protected Species

3.3.1 Endangered Species Act

The purpose of the ESA (16 U.S.C. § 1531 et seq.) is to protect and recover imperiled species and the ecosystems upon which they depend. Section 7(a)(2) of the ESA requires each federal agency to insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat of such species. “Jeopardize” means to reduce appreciably the likelihood of survival and recovery of a species in the wild by reducing its numbers, reproduction, or distribution. When a federal agency’s action “may affect” an ESA-listed species, that agency is required to consult formally with NMFS for marine species, some anadromous species, and their designated critical habitats, or with the U.S. Fish and Wildlife Service (FWS) for terrestrial and freshwater species or their designated critical habitat. The product of formal consultation is the relevant service’s biological opinion (BiOp).

The ESA also prohibits the taking of listed species without a special exemption. Taking that is incidental to and not intended as part of a Federal action is not considered to be prohibited taking under the ESA, provided that such taking is in compliance with the reasonable and prudent measures and terms and conditions of an incidental take statement (ITS). The reasonable and prudent measures are nondiscretionary, and must be undertaken by the Federal agency for the take exemption to apply. For BiOps reaching a jeopardy or adverse modification conclusion, NMFS develops reasonable and prudent Alternatives that would avoid the likelihood of jeopardy or adverse modification of critical habitat. Western Pacific fisheries authorized under the FEP operate in accordance with ITSs set by ESA consultations, including applicable reasonable and prudent measures, and their associated terms and conditions, intended to minimize the potential effects of incidental take.

The following list identifies the valid BiOps under which western Pacific longline fisheries currently operate. This section summarizes much of the information contained in these documents to describe baseline conditions. For further information, refer to the following documents on the NMFS website or by contacting NMFS using the contact information at the beginning of the document. Table 6 includes all of the ESA-listed species in the PIR, along with additional information about the status of the species. For additional information, please see Section 3.4 of the annual Pelagic FEP SAFE Report. Direct links are provided below when available.

NMFS. 2001. Biological Opinion on Authorization of Pelagic Fisheries under the Fishery Management Plan for the Pelagic Fisheries of the Western Pacific Region. This BiOp covers longline fisheries in Guam and the CNMI.

NMFS. 2010. Endangered Species Act Section 7 Consultation Biological Opinion on Measures to Reduce Interactions between Green Sea Turtles and the American Samoa-based Longline Fishery-Implementation of an Amendment to the Fishery Ecosystem Plan for Pelagic Fisheries of the Western Pacific Region.

USFWS 2012, Biological Opinion of the U.S. Fish and Wildlife Service for the Operation of Hawaii-based Pelagic Longline Fisheries, Shallow-Set and Deep-Set, Hawaii.

NMFS. 2014. Biological Opinion on Continued Operation of the Hawaii-based Deep-set Pelagic Longline Fishery.

NMFS. 2015. Biological Opinion and Conference Opinion on Continued Operation of the American Samoa Longline Fishery.

NMFS. 2017. Supplement to the 2014 Biological Opinion on Continued Operation of the Hawaii-based Deep-set Pelagic Longline Fishery. *(direct link unavailabe)*

NMFS. 2019. Biological Opinion on the Continued Authorization of the Hawaii Pelagic Shallow-set Longline Fishery.

NMFS. 2022a. Supplement to the 2014 Biological Opinion on Continued Operation of the Hawaii-based Deep-set Pelagic Longline Fishery.

NMFS. 2022b. Supplement to the Authorization of the American Samoa Longline Fishery; Effects to Oceanic Whitetip Sharks and Giant Manta Rays.

NMFS reinitiated consultation for the Hawaii deep-set fishery on October 4, 2018, due to reaching several reinitiation triggers. The fishery exceeded the ITS for east Pacific green sea turtle DPS in mid-2018. Listing of the oceanic whitetip shark (83 FR 4153) and giant manta ray (83 FR 2916) as threatened species, and designation of MHI insular false killer whale (IFKW) critical habitat (83 FR 35062) also triggered the requirement for reinitiated consultation. On October 4, 2018, NMFS determined that the conduct of the fishery during the period of consultation will not violate ESA Sections 7(a)(2) and 7(d) (updated April 15, 2020). On September 28, 2022, NMFS completed the Section 7 consultation and issued a new supplemental BiOp was completed on both oceanic whitetip shark and giant manta ray (PIRO-2022-02105).

NMFS reinitiated consultation for the American Samoa deep-set longline fishery on April 3, 2019, due to reaching several reinitiation triggers. The fishery exceeded the ITS for the east Indian west Pacific, southwest Pacific, central South Pacific, and east Pacific green sea turtle DPS; hawksbill; and olive ridley sea turtles in 2018. Listing of the oceanic whitetip shark (83 FR 4153), giant manta ray (83 FR 2916), and chambered nautilus (83 FR 48976) as threatened species also triggered the requirement for reinitiated consultation. On April 3, 2019, NMFS determined that the conduct of the fishery during the period of

consultation will not violate ESA Sections 7(a)(2) and 7(d) (updated May 6, 2020). On August 26, 2022, NMFS concluded that the continuation of the bottomfish fisheries in American Samoa is not likely to jeopardize the continued existence of the threatened oceanic whitetip shark. An ITS, while not required, was established to monitor the impact of incidental take.

In addition to the BiOps listed above, more detailed information, including the range, abundance, status, and threats of the listed sea turtles, marine mammals, and seabirds can be found in the status reviews, 5-year reviews, and recovery plans for each species on the NMFS species pages found at the following website: https://www.fisheries.noaa.gov/pacific-islands/endangered-species-conservation/esa-consultations-pacific-islands.

NMFS monitors the effects of the fishery on non-ESA listed marine mammals through comparison of the average level of interactions which result in M&SI to a stock's potential biological removal (PBR). For most marine mammal stocks where the PBR is available, the number of observed takes of marine mammal species in the deep-set longline fishery inside the U.S. EEZ around Hawaii is well below the PBR in the time period covered by the most current stock assessment report. For more information on protected species, including current observed interactions by fishery, please see Section 3.4 of the annual Pelagic FEP SAFE Report.

3.3.2 Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) prohibits, with certain exceptions, the take of marine mammals in the U.S. EEZ and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the United States. The MMPA authorizes the Secretary of Commerce to protect and conserve all cetaceans (whales, dolphins, and porpoises) and pinnipeds (seals and sea lions, except walruses). The MMPA requires NMFS to prepare and periodically review marine mammal stock assessment reports (see 16 U.S.C. § 1361, *et seq*.). These reports categorize stocks as either strategic, or not strategic. Strategic stocks are either ESA-listed stocks, depleted stocks under the MMPA, or stocks with estimated human-caused mortality that exceeds its potential biological removal (PBR) level.

Pursuant to the MMPA, NMFS has promulgated specific regulations that govern the incidental take of marine mammals during fishing operations (50 CFR 229). Under Section 118 of the MMPA, NMFS must publish, at least annually, a List of Fisheries that classifies U.S. commercial fisheries into three categories, based on relative frequency of incidental mortality and serious injury to marine mammals in each fishery:

Category I designates fisheries with frequent serious injuries and mortalities incidental to commercial fishing. Annual mortality and serious injury of a stock in a given fishery is by itself responsible for the annual removal of greater than or equal to 50 percent or more of any stock's PBR level (i.e., frequent incidental mortality and serious injuries of marine mammals).

Category II designates fisheries with occasional serious injuries and mortalities incidental to commercial fishing. Annual mortality and serious injury of a stock in a given fishery is, collectively with other fisheries, responsible for the annual removal of greater than 10 percent of any stock's PBR level, and is by itself responsible for the annual removal of between 1 and less than 50 percent, exclusive, of any stock's PBR level (i.e., occasional incidental mortality and serious injuries of marine mammals).

Category III designates fisheries with a remote likelihood or no known serious injuries or mortalities. A Category III fishery is, collectively with other fisheries, responsible for the annual removal of 10 percent or less of any stock's PBR level; or collectively with other fisheries, more than 10 percent of any stock's

PBR level, but is by itself responsible for the annual removal of 1 percent or less of PBR level (i.e., a remote likelihood or no known incidental mortality and serious injuries of marine mammals).

According to the 2022 List of Fisheries (87 FR 229, May 19, 2022), the Hawaii deep-set longline fishery is a Category I fishery, and the Hawaii shallow-set longline fishery, the Hawaii Troll fishery, and the American Samoa longline fishery are Category II fisheries. Among other requirements, owners of vessels or gear engaging in a Category I or II fishery are required under 50 CFR 229.4 to obtain a marine mammal authorization to lawfully take incidentally, non-ESA listed marine mammals by registering with NMFS' marine mammal authorization program.

Section 118 of the MMPA requires NMFS to prepare a take reduction plan for each strategic marine mammal stock that interacts with a Category I or Category II fishery. NMFS established the False Killer Whale Take Reduction Team in 2010 (75 FR 2853) and implemented the False Killer Whale Take Reduction Plan (FKWTRP) in 2012 (72 FR 71260) to reduce mortalities and serious injuries (M&SI) of false killer whales in the Hawaii longline fishery.

Section 101(a)(5)(E) of the MMPA requires the Secretary of Commerce to allow the incidental, but not intentional, taking of individuals from marine mammal stocks that are designated as depleted because of a listing as threatened or endangered under the ESA in the course of commercial fishing operations if it is determined that three criteria are met:

1. Incidental mortality and serious injury will have a negligible impact on the affected species or stock;
2. A recovery plan has been developed or is being developed; and
3. Where required under Section 118 of the MMPA, a monitoring program has been established, vessels engaged in such fisheries are registered in accordance with Section 118 of the MMPA, and a take reduction plan has been developed or is being developed for such species or stock.

On May 6, 2021, NMFS issued a permit under the MMPA section 101(a)(5)(E), addressing the Hawaii deep-set fishery's interactions with ESA-listed species or depleted stocks of marine mammals (86 FR 24384). The permit authorizes the incidental, but not intentional, taking of ESA-listed humpback whales (Central North Pacific or CNP stock) and MHI insular false killer whales to vessels registered in the Hawaii deep-set fishery. In issuing the permit, NMFS determined that incidental taking by the deep-set fishery will have a negligible impact on the affected stocks of marine mammals. The humpback whale CNP stock delineation under the MMPA includes both ESA-listed and non-ESA-listed distinct population segments. However, any potential overlap of the deep-set fishery with humpback whales is with the Hawaii distinct population segment, which is no longer listed under the ESA (81 FR 62259, September 8, 2016).

Additional information on the marine mammals that interact with FEP fisheries are described in Section 3.4 of the annual Pelagic FEP SAFE Report.

3.3.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) makes it illegal to intentionally take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid Federal permit. In 2012, the FWS issued a special permit for the shallow-set fishery under the MBTA authorizing incidental take of certain seabirds in the Hawaii shallow-set fishery over a period of three years (USFWS 2012). On December 27, 2017, the U.S. Ninth Circuit Court of Appeals issued a split decision that reversed a lower district court decision

upholding the MBTA permit. *Turtle Island Restoration Network v. NMFS & FWS*, 13-17123 (9th Cir. 2017). The Ninth Circuit Court majority opinion found that FWS improperly relied upon the special use permit to authorize the incidental take of sea birds by a commercial fishery. The permit expired on its own terms in March 2018 and NMFS determined that it would not reapply for the permit. On January 7, 2021, the FWS published a final rule (effective February 8, 2021) defining the scope of the MBTA as it applies to conduct resulting in the injury or death of migratory birds protected by the MBTA (86 FR 1134). In that January 2021 rule, FWS determined that the MBTA's prohibitions on pursuing, hunting, taking, capturing, killing, or attempting to do the same, apply only to actions directed at migratory birds, their nests, or their eggs. On October 4, 2021, FWS published a final rule (effective December 3, 2021) revoking the January 2021 rule, and returning the implementation of the MBTA as prohibiting incidental take and applying enforcement discretion consistent with judicial precedent and FWS practice prior to 2017 (86 FR 54642). NMFS and the Council continue to monitor interactions with seabirds and have implemented take mitigation measures.

Additional information on the seabirds that interact with FEP fisheries are described in in Section 3.4 of the annual Pelagic FEP SAFE Report.

3.3.4 Analysis and Monitoring Approach

Table 9 lists the species or populations of species protected under the ESA, MMPA, and MBTA or those under consideration for listing under the ESA that have the potential to interact with the active longline fisheries managed under the Pelagics FEP. For the purposes of illustrating which species are considered further in the evaluation of the effects of the Alternatives on the listed species, the table includes the ocean zone in which the species are found, which can be coastal, pelagic, or both; and whether the operation of the longline fisheries is likely to have no effect, a discountable effect, or an adverse effect on the species or distinct population. Potential effects on protected species from the operation of fisheries stem from either vessel transiting activity or fishing activity. Because longline fishing activity is prohibited throughout the coastal zone of the action area, those species found exclusively within the coastal zone are only exposed to those effects associated with vessel transiting.

In Table 9, NMFS reserves the no effect descriptor (N) only for those species and populations which do not occur in the area of operation of the fishery under consideration. Because the Guam and CNMI longline fisheries are not currently active, these fisheries have no effect on protected species and are not included in Table 9. NMFS considers discountable effects (D) as those that are highly unlikely to occur, such as those effects from vessel transiting (noise, collisions, waste, discharge, or emissions). NMFS also considers that species which have not been observed as hooked, entangled, or depredating bait or catch, or species with observed interactions that are exceedingly rare, as discountable. Finally, if NMFS observers have recorded instances of hooking and entanglement with a species or population, and these interactions are reasonably expected to continue due to the vulnerability of the species or population to longline gear, NMFS considers that the species is adversely affected by the operation of the subject longline fishery (A).

In general, species or populations only found in the coastal zone are only exposed to potential effects from vessel transiting, and the effects are therefore discountable. Similarly, effects from vessel collisions which may occur during transiting or fishing are extremely unlikely to occur, and therefore discountable. In the rest of this section, we provide an analysis of the adverse effects of the operation of the fisheries on protected species. In Chapter 4, we consider whether the Alternatives have the potential to change the operation of the fisheries in such a way that the basis for the no effect or discountable effects descriptor has changed, or change the baseline levels of fishery interactions the protected species in such a way that the analysis of the effects of the operation of the fishery as a whole is altered.

NMFS monitors fishery interactions with protected species using at-sea observers, among other means. The NMFS Observer Program monitors interactions on 100 percent of shallow-set fishing trips and on approximately 20 percent of all Hawaii and American Samoa deep-set longline trips, although past coverage in the American Samoa was lower due to federal funding constraints. PIFSC generates fleet-wide estimates of interactions for the deep-set longline fisheries using methods described by McCracken et al. (see WPFMC 2022), when available. When these data are not available, NMFS estimates fleet-wide interactions by expanding observed takes using an expansion factor based on the observer coverage rate. For example, because the Hawaii deep-set longline fishery was observed at a 20.4 percent coverage rate in 2017, NMFS multiplied each observed interaction by 4.9 to estimate interactions at a 100 percent coverage rate.

Any U.S. citizen may petition to list a species under the ESA. If the range of a newly listed species overlaps with the operation of the longline fisheries, NMFS re-initiates consultation on the operation of the fishery. Given the potential effects of the operation of the fisheries on currently listed species, we expect that the longline fisheries would not adversely affect any newly listed species whose ranges are limited to the coastal zone.

Table 11. ESA-listed and candidate species with the potential to interact with longline vessels permitted under the Pelagic FEP. The codes for fisheries effects are: A = adverse effects, N = no effect, and D = discountable impact.

Species or Distinct Population Segment (DPS) Common Name	**Scientific Name**	**Protection Status**	**Population Trend**	**Zone**	**HI DSLL**	**HI SSLL**	**ASLL**
Sea Turtles							
Green sea turtle, Central North Pacific	*Chelonia mydas*	Threatened	Increasing	Coastal / Pelagic	A	A	A
Green sea turtle, Eastern Pacific		Threatened		Coastal / Pelagic	A	A	A
Green sea turtle, Central South Pacific		Endangered		Coastal / Pelagic	A	A	A
Green sea turtle, Central West Pacific		Endangered		Coastal / Pelagic	A	A	A

Green sea turtle, East Indian-West Pacific		Threatened		Coastal / Pelagic	A	A	A
Green sea turtle, Southwest Pacific		Threatened		Coastal / Pelagic	A	A	A
Hawksbill turtle	*Eretmochelys imbricata*	Endangered		Coastal / Pelagic	D	D	D
Leatherback turtle	*Dermochelys coriacea*	Endangered		Coastal / Pelagic	A	A	A
Loggerhead sea turtle, North Pacific	*Caretta caretta*	Endangered		Pelagic	A	A	N
Loggerhead sea turtle, South Pacific		Endangered		Pelagic	N	N	A
Olive ridley turtle	*Lepidochelys olivacea*	Threatened, except for Mexico's nesting population which is Endangered		Pelagic	A	A	A
Marine Mammals							
Blue whale	*Balaenoptera musculus*	Endangered		Pelagic	D	D	N
Fin whale	*Balaenoptera physalus*	Endangered		Pelagic	D	D	N
Hawaiian monk seal	*Neomonachus schauinslandi*	Endangered		Coastal	D	D	N
Main Hawaiian Islands insular false killer whale	*Pseudorca crassidens*	Endangered		Coastal	A	D	N

North Pacific right whale	*Eubalaena japonica*	Endangered		Pelagic	D	D	N
Sei whale	*Balaenoptera borealis*	Endangered		Pelagic	D	D	N
Sperm whale	*Physeter macrocephalus*	Endangered		Pelagic	A	D	D
Guadalupe fur seal	*Arctocephalus townsendi*	Threatened		Pelagic	D	A	N
Humpback whale, Mexico	*Megaptera novaeangliae*	Threatened		Pelagic	D	D	N
Killer whale, Southern Resident	*Orcinus orca*	Endangered		Coastal	D	D	N
Seabirds							
Hawaiian dark-rumped petrel	*Pterodroma phaeopygia sandwichensis*	Endangered					
Newell's shearwater	*Puffinus auricularis newelli*	Threatened					
Short-tailed albatross	*Phoebastria albatrus*	Endangered					
Band-rumped storm petrel Hawaii DPS	*Oceanodroma castro*	Endangered					
Fish							
Scalloped hammerhead shark, Indo-West Pacific	*Sphyrna lewini*	Threatened		Pelagic	A	N	A

Scalloped hammerhead shark, Eastern Pacific		Endangered		Pelagic	D	D	N
Oceanic white tip shark	*Carcharhinus longimanus*	Threatened		Pelagic	A	A	A
Giant manta ray	*Manta birostris*	Threatened		Coastal /Pelagic	A	A	A
Shortfin mako shark	*Isurus oxyrinchus*	Candidate		Pelagic	n/a	n/a	n/a
Marine Invertebrates							
Coral	*Acropora globiceps*	Threatened		Coastal	N	N	D
	Acropora jacquelineae	Threatened		Coastal	N	N	D
	Acropora retusa	Threatened		Coastal	N	N	D
	Acropora speciose	Threatened		Coastal	N	N	D
	Euphyllia paradivisa	Threatened		Coastal	N	N	D
	Isopora crateriformis	Threatened		Coastal	N	N	D
	Seriatopora aculeate	Threatened		Coastal	N	N	D
Chambered nautilus	*Nautilus pompilius*	Threatened		Coastal	N	N	D
Black abalone	*Haliotis cracherodii*	Endangered		Coastal	D	D	N

White abalone	*Haliotis sorenseni*	Endangered		Coastal	D	D	N
Cauliflower coral	*Pocillopora meandrina*	Candidate			D	D	D
Giant clam	*Tridacna derasa*	Candidate		Coastal	D	D	D
	Tridacna gigas	Candidate		Coastal	N	N	D
	Tridacna maxima	Candidate		Coastal	N	N	D
	Tridacna squamosa	Candidate		Coastal	D	D	D
	Hippopus hippopus	Candidate		Coastal	N	N	D

3.4 Marine Habitats, Critical Habitat, and Essential Fish Habitat

Under the baseline, FEP longline fisheries are not known to have adverse effects on marine habitats. Fishing does not occur in any area designated as critical habitat, besides MHI insular false killer whale (MHI IFKW) habitat (83 FR 35062, effective August 28, 2018). MHI IFKW critical habitat is defined in areas within the action area and their prey species are an essential characteristic of that critical habitat. Longline fishing does not occur in marine protected areas (MPA), marine sanctuaries, or marine monuments so marine protected areas would not be affected. Also included are brief discussions on leatherback sea turtle and monk seal critical habitat as they may be affected by the operation of longline fisheries, but are not at risk to be adversely modified.

Longline fishing involves suspending baited hooks in the upper surface layers of the water column, which does not materially affect benthic marine habitat under typical operations. Derelict longline gear may impact marine benthic habitats, especially substrate such as corals if carried by currents to shallow depths. When fishing, all longliners occasionally lose hooks, mainline, floats, float lines, and branch lines, which include lead weights in the deep-set fishery.

3.4.1 Leatherback Sea Turtle Critical Habitat

On January 26, 2012, NMFS designated critical habitat for leatherback sea turtles off the west coast of the U.S., including areas off Washington, Oregon, and California (77 FR 4170). Because Hawaii longline vessels may occasionally transit through the U.S. EEZ to and from west coast ports, NMFS evaluated the fishery for potential effects to leatherback sea turtle critical habitat in the 2014 BiOp for the deep-set fishery (NMFS 2014). Because NMFS prohibits longline fishing within the EEZ off the west coast,

NMFS determined that the deep-set longline fishery may affect, but is not likely to adversely modify designated critical habitat for leatherback sea turtles. NMFS came to a similar conclusion for the shallow-set longline fishery in its 2019 BiOp (NMFS 2019).

3.4.2 Monk Seal Critical Habitat

On August 21, 2015, NMFS published a final rule (80 FR 50926) designating critical habitat for the Hawaiian monk seal (*Neomonachus schauinslandi*) in the MHI and expanding monk seal critical habitat in the Northwestern Hawaiian Islands (NWHI). NMFS identified features that are essential for the conservation of monk seals, including areas preferred for pupping and nursing, areas that support adequate prey quality and quantity for foraging, and areas for hauling out, resting, or molting. Accordingly, NMFS identified critical habitat in certain areas in the MHI, and around designated islands in the NWHI, to include, generally, from the beach to the 200-m depth contour and the seafloor and the waters and habitat within 10 m of the seafloor. Specific critical habitat boundaries can be found in the final rule. Additionally, an ESA Section 7 consultation determined that the Hawaii deep-set and shallow-set longline fishery may affect, but are not likely to adversely modify monk seal critical habitat. NMFS documented its determinations in a memorandum of concurrence dated September 16, 2015.

3.4.3 Main Hawaiian Islands Insular False Killer Whale Critical Habitat

On July 24, 2018, NMFS designated critical habitat for the MHI IFKW DPS (83 FR 35062). The critical habitat area encompasses waters from 45 to 3,200 m deep around the MHI. Based on considerations of economic and national security impacts, NMFS excluded certain areas from designation because the benefits of exclusion outweigh the benefits of inclusion, and exclusion would not result in extinction of the species. Additional details are available in the Biological Report (NMFS 2018) and Economic Report (Cardno 2018) associated with the final rule.

Federal regulations prohibit longline fishing in the MHI longline prohibited area, which extends about 50 to 75 nm around the MHI, depending on the location, which closes the area the deep-set longline fishery in most of MHI IFKW range.

3.4.4 Essential Fish Habitat

Essential Fish Habitat (EFH) is defined in the Magnuson-Stevens Act as those waters and substrate that are necessary for fish spawning, breeding, feeding, and growth to maturity. This includes marine areas and their chemical and biological properties that are utilized by inhabiting organisms. Substrate includes sediment, hard bottom, and other structural relief underlying the water column as well as their associated biological communities. EFH designations for all PMUS of the Western Pacific Pelagic FEP includes tropical and temperate waters. Pelagic EFH for egg/larval states is the water column down to a depth of 200 m (100 fm) from the shoreline to the outer limit of the EEZ. Juvenile/adult EFH is the water column down to a depth of 1,000 m (500 fm). Detailed descriptions of the EFH for the Pelagic FEP Species can be found in a Pelagic FEP Appendix.

In addition to and as a subset of EFH, the Council described Habitat Areas of Particular Concern (HAPC) based on the following criteria: ecological function of the habitat is important, habitat is sensitive to anthropogenic degradation, development activities are or will stress the habitat, and/or the habitat type is rare. In considering the potential impacts of a proposed fishery management action on EFH, all designated EFH must be considered.

In 1999, the Council developed and NMFS approved EFH and HAPC designations for PMUS of the Pelagic FMP (Amendment 8; 74 FR 19067, April 19, 1999). Ten years later, in 2009, the Council developed and NMFS approved five archipelagic-based fishery ecosystem plans (FEPs). The FEPs incorporated and reorganized elements of the Councils' species-based FMPs into a spatially oriented management plan (75 FR 2198, January 14, 2010). EFH definitions and related provisions for all FMP fishery resources were subsequently carried forward into the respective FEPs.

NMFS considers all EFH in determining whether a proposed fishery management action may affect EFH. Table 10 provides the HAPC for Pelagic FEP PMUS by life stage. U.S. and U.S. participating territory longline fisheries are not known to adversely affect EFH or HAPC.

Table 12. EFH and HAPC for all life stages of PMUS.

Species Complex	EFH	HAPC
Temperate species: Striped Marlin (T*etrapurus audax*), Bluefin Tuna (*Thunnus thynnus*), Swordfish (*Xiphias gladius*), Albacore (Th*unnus alalunga*), Mackerel (S*comber* spp.), Bigeye (*Thunnus obesus*), Pomfret (family Bramidae)	**Eggs and larvae:** the (epipelagic zone) water column down to a depth of 200 m (100 fm) from the shoreline to the outer limit of the EEZ **Juvenile/adults:** the water column down to a depth of 1,000 m (500 fm) from the shoreline to the outer limit of the EEZ	The water column from the surface down to a depth of 1,000 m (500 fm) above all seamounts and banks with summits shallower than 2,000 m (1,000 fm) within the EEZ
Tropical species: Yellowfin (*Thunnus albacares*), Kawakawa (*Euthynnus affinis*),Skipjack (*Katsuwonus pelamis*),Frigate and bullet tunas (*Auxis thazard, A. rochei*), Blue marlin (*Makaira nigricans*), Slender tunas (*Allothunnus fallai*), Black marlin (*Makaira indica*), Dogtooth tuna (*Gymnosarda unicolor*), Spearfish (*Tetrapturus* spp.), Sailfish *(Istiophorus platypterus*), Mahimahi (*Coryphaena hippurus, C. equiselas*), Ono (*Acanthocybium solandri*), Opah (*Lampris* spp.*)*	Same as EFH for temperate pelagic MUS	Same as HAPC for temperate pelagic MUS

Species Complex	EFH	HAPC
Sharks: Pelagic thresher shark (*Alopias pelagicus*), Bigeye thresher shark (*Alopias superciliousus)*, Common thresher shark (*Alopias vulpinus*), Silky shark (*Carcharhinus falciformis*), Oceanic whitetip shark (*Carcharhinus longimanus*), Blue shark (*Prionace glauca*), Shortfin mako shark (*Isurus oxyrinchus*), Longfin mako shark (*Isurus paucus*), Salmon shark (*Lamna ditropis*)	Same as EFH for temperate pelagic MUS	Same as HAPC for temperate pelagic MUS
Squid: Neon flying squid (*Ommastrephes bartamii*), Diamondback squid (*Thysanoteuthis rhombus*), Purple flying squid *(Sthenoteuthis oualaniensis)*	Same as EFH for temperate pelagic MUS	Same as HAPC for temperate pelagic MUS

3.5 Fishery and Socio-economic Setting

The socioeconomic setting for the Hawaii and American Samoa longline fisheries is described below. A more detailed description of the fishery and the latest socio-economic statistics, including revenue trends, can be found in the FEP Annual SAFE Reports at: http://www.wpcouncil.org/annual-reports/.

U.S. and territorial longline fisheries comprise the Hawaii deep-set tuna longline fleet (including several vessels based on the U.S. West Coast), the Hawaii shallow-set swordfish longline fleet, and the American Samoa albacore longline fleet. In the past, several deep-set tuna longline vessels were based in Guam and the CNMI, but there has been no longline fishing in these locations since 2011.

3.5.1 Hawaii Longline Fisheries

Domestic longline fishing around Hawaii consists of the shallow-set sector and the deep-set sector, subject to separate mitigation measures based on the characteristics of the fishing activity. The deep-set fishery targets bigeye tuna in the EEZ around Hawaii and on the high seas at an average target depth of 167 m (WPFMC 2009). The shallow-set fishery targets swordfish (*Xiphias gladius*) to the north of the Hawaiian Islands. NMFS and the Council manage the fisheries under a single limited-access permit program. Some Hawaii-permitted vessels also hold American Samoa longline permits. The number of dual-permitted vessels has ranged between 14 and 26 over the last five years (NMFS unpublished data). Dual-permitted vessels land their catch in Hawaii or American Samoa. For the most recent fishery performance information, please see the Pelagic FEP SAFE report.

Fishing locations may vary seasonally based on oceanographic conditions, catch rates of target species, and management measures, among others. The deep-set fishery operates in the deep, pelagic waters around the Hawaiian archipelago and on the high seas throughout the year, mostly within 300-400 nm (556-741 km) of the main Hawaiian Islands (MHI). However, federal regulations and other applicable laws prohibit longline fishing inside the 200 nm U.S. EEZ around the Northwestern Hawaiian Islands. Longline fishing within 50 to 75 nm from the shoreline in the MHI is prohibited to minimize the potential for gear conflicts with small boat fisheries and interactions with protected species.

Federal regulations may temporarily prohibit longline fishing in the Southern Exclusion Zone (SEZ), an area in the EEZ south of Hawaii (84 FR 5356, February 21, 2019). An SEZ closure is triggered under regulations implementing the False Killer Whale Take Reduction Plan if there are two or more observed serious injuries or mortalities of false killer whales in the EEZ around Hawaii in a given year.

Some limited longline fishing occurred in the U.S. EEZ around U.S. Pacific Remote Island Areas (PRIA) of Kingman Reef and Palmyra Atoll (5° N) prior to 2016. Figure 8 shows the distribution of fishing effort by the Hawaii deep-set longline fleet as the annual average number of hooks per 5 degree square in millions of hooks over 2019. The distribution of fishing operations over the fishing grounds varies seasonally and from year-to-year. Figure 8 includes both the 2019 effort distribution and the average effort distribution from 2008-2018. Figure 9 provides the same effort distribution maps for the Hawaii shallow-set longline fishery.

In general, deep-set longline vessels operate out of Hawaii ports, with the vast majority based in Honolulu. Infrequently, deep-set trips originate from other ports such as Long Beach or San Francisco, California, or Pago Pago, American Samoa, and then fishermen land their catches in Hawaii. Fishermen departing from California begin fishing on the high seas, outside the EEZ. Fishermen departing from American Samoa usually begin fishing near the Equator or farther north where they expect higher catch rates of bigeye tuna. The shallow-set (swordfish-targeting) longline fishery operates in the U.S. EEZ around Hawaii and on the high seas to the north and northeast of the MHI seasonally.

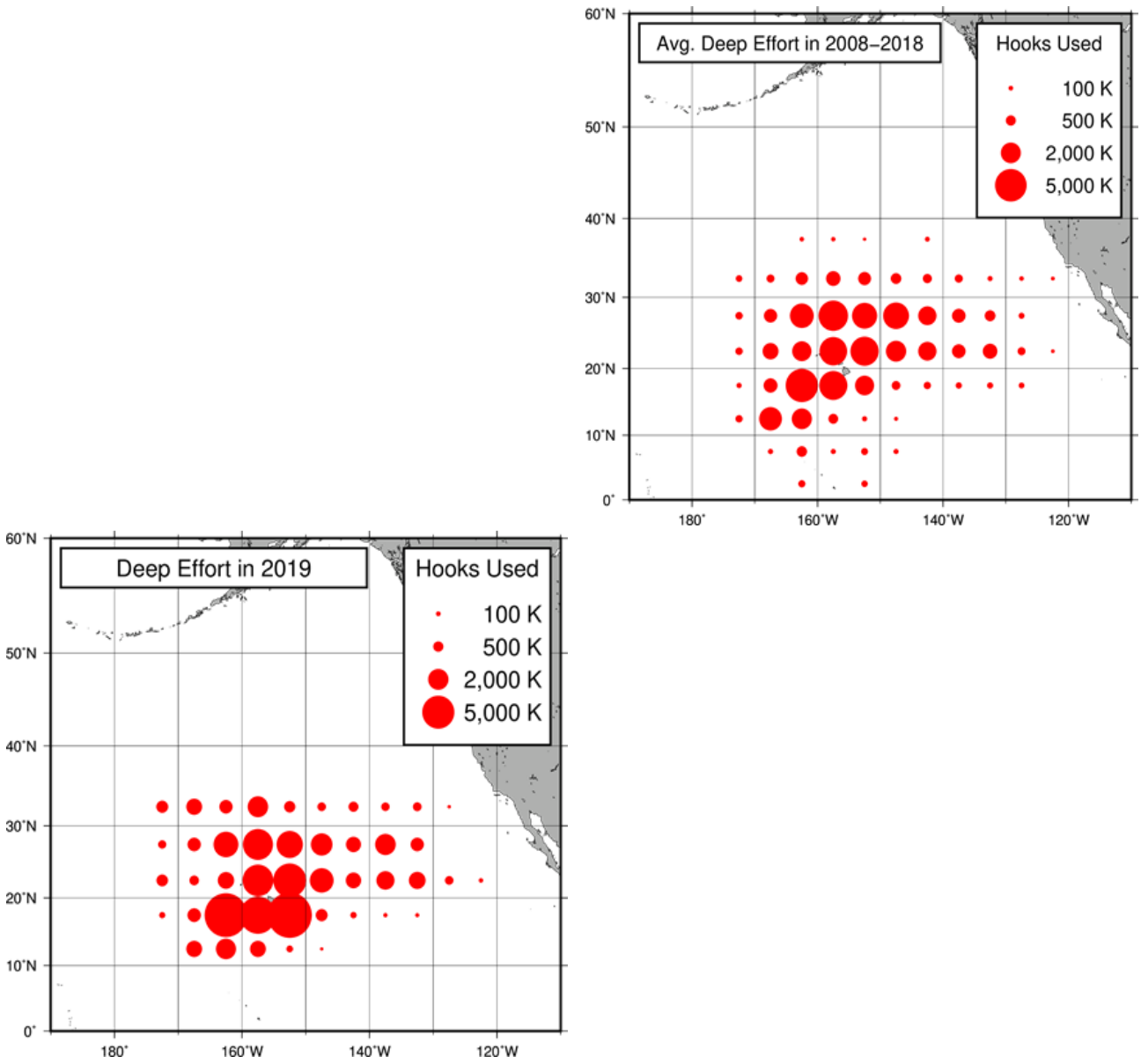


Figure 10. Left: distribution of deep-set fishing effort (hooks deployed) 2019. Right: Distribution of shallow-set fishing effort (hooks deployed) 2019. Source: R. Ito report to Council, March 2020

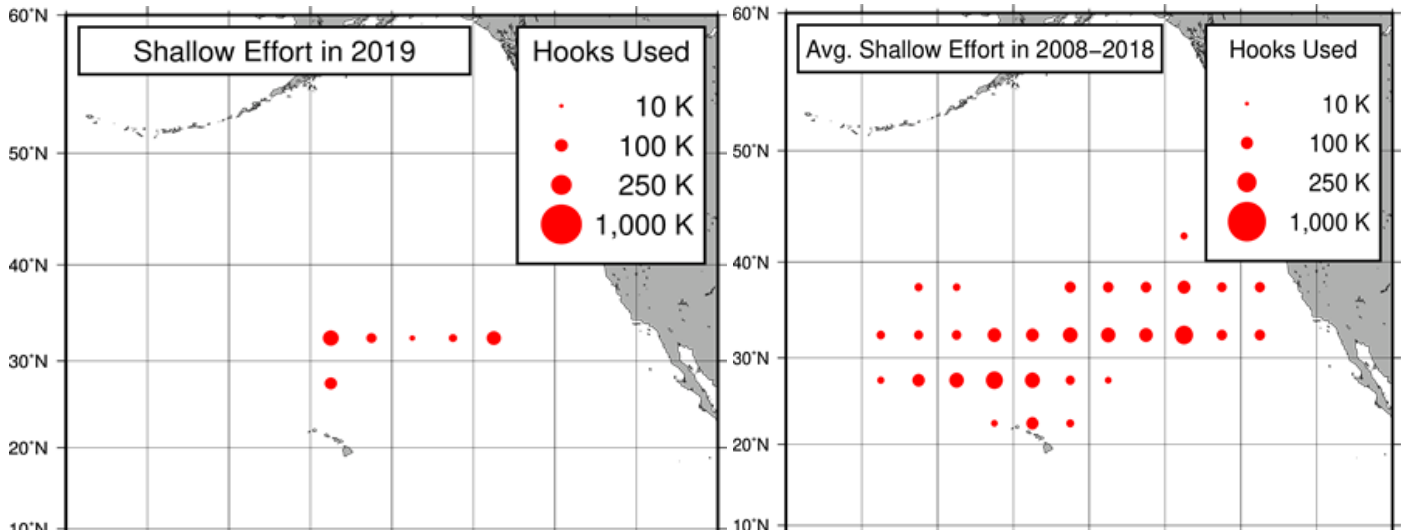


Figure 11. Left: distribution of deep-set fishing effort (hooks deployed) 2008-2018. Right: Distribution of shallow-set fishing effort (hooks deployed) 2008-2018. Source: R. Ito report to Council, March 2020

Fishing effort in the Hawaii deep-set longline fishery has increased over the years. From 2004-2012, the annual number of vessels that participated in the deep-set fishery remained relatively stable, ranging from 124 to 129. The number of active vessels has increased since 2012, with an average of 141 vessels operating over the last ten years (2012-2021). In 2021, 146 deep-set longline vessels made 1,690 trips with 22,192 sets and deployed 65.4 million hooks (Figure 10 and 11). In 2021, the deep-set longline revenue was $108.5 million and represented 87% of the total revenue from Hawaii-based longline fisheries.

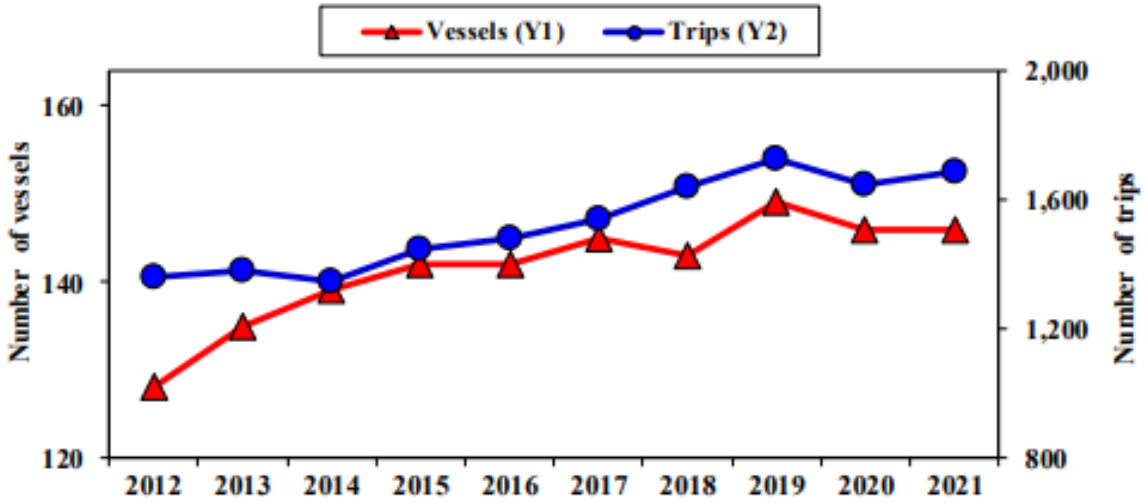


Figure 12. Number of Hawaii-permitted deep-set longline vessels**.** Source: WPFMC (2022).

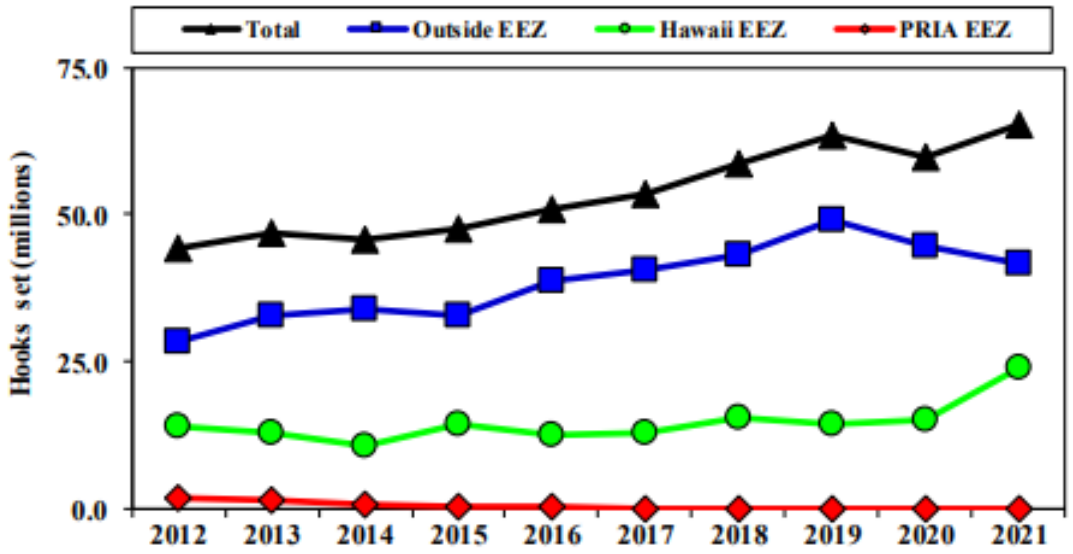


Figure 13. Number of hooks set by Hawaii-permitted deep-set longline vessels. Source: WPFMC (2022)

The number of vessels participating in the shallow-set fishery has declined over time from a high of 35 vessels in 2006 to a low of 11 vessels in 2018 with 17 participants in 2021. The numbers of trips and hooks have been more variable, although well below amounts in years prior (Figure 12 and 13). The shallow-set longline fishery is subject to an annual hard cap for the numbers of interactions with leatherback and loggerhead sea turtles. If the fishery reaches the hard cap, under current regulations, the fishery is subject to closure. The shallowest fishery generated $4.7 million in 2021 and accounted for 4% of the total revenue.

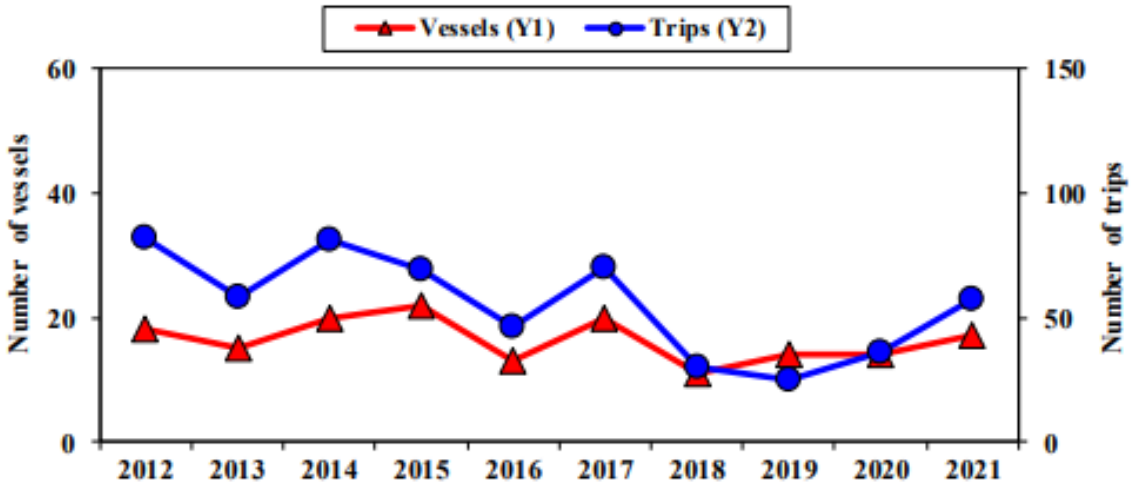


Figure 14. Number of Hawaii-permitted shallow-set longline vessels. Source: WPFMC (2022)

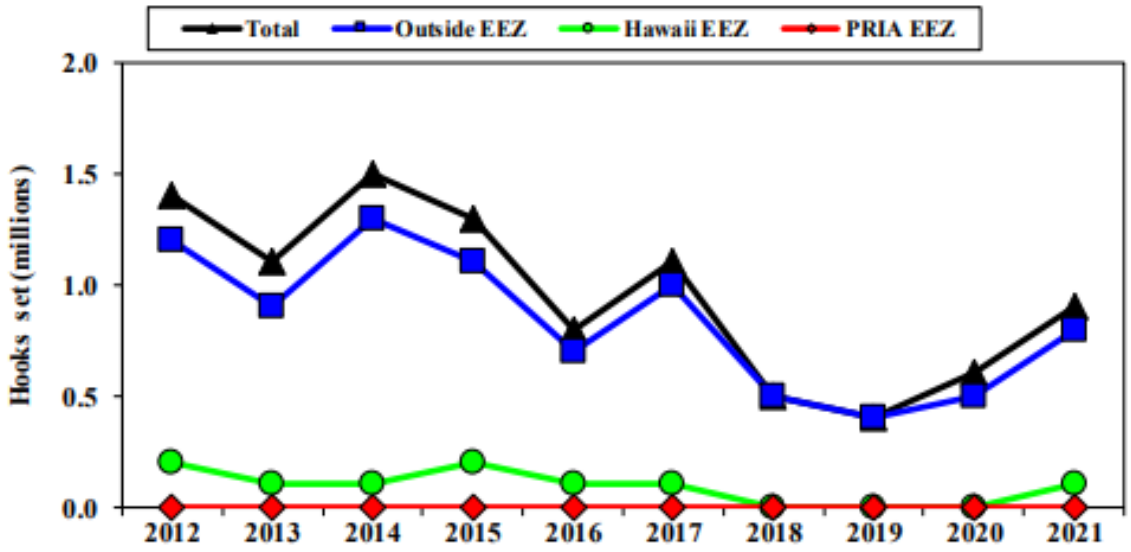


Figure 15. Number of hooks set by Hawaii-permitted shallow-set longline vessels. Source: WPFMC (2022)

3.5.2 Hawaii Troll and Handline Fisheries

Trolling and, to lesser extent, handline fishing is the largest pelagic fishery in Hawaii in terms of participation, although it catches annually a relatively modest volume of fish compared to longline gear. Troll and handline catches are dominated by yellowfin tuna in Hawaii. Other commonly caught troll catches include mahimahi, wahoo, and blue marlin. There were 382 fishers that fished 3,385 days in 2021 (WPFMC 2022). In 2021, the MHI troll revenue was $6.7 million, or 5% of the 2021 total, and the MHI handline fishery total revenue was $2.9 million, or 2% of the 2021 total.

3.5.3 American Samoa Longline Fishery

The longline fishery based in American Samoa is a limited access fishery with a maximum of 60 vessels under the federal permit program. Vessels with a valid permit in this fishery may also apply for a Hawaii longline permit (see Section 3.5.1). This action only applies to those with dual permits, not those with just an American Samoa longline permit. Vessels range in size from under 40 to over 70 ft long. The fishery primarily targets albacore for canning in the local Pago Pago cannery, although the fishery also catches and retains other tunas (e.g., bigeye, yellowfin, and skipjack), and other pelagic MUS (e.g., billfish, mahimahi, wahoo, oilfish, moonfish (opah), and sharks) for sale and home consumption. The target depth for albacore tuna is approximately 100-300 m (WPFMC 2009). Troll and handline fishing also occurs on a commercial and non-commercial basis in American Samoa, representing relatively small annual catches of yellowfin and skipjack tunas, and other pelagic MUS.

American Samoa longline fishing vessels operate in the EEZ around American Samoa, on the high seas in international waters, and occasionally in the EEZs of countries adjacent to American Samoa. Additionally, around 27 American Samoa longline limited access permit holders also hold Hawaii longline limited access permits, the latter of which allows them to fish in the EEZ around Hawaii and land fish in Hawaii. As previously noted, vessels possessing both an American Samoa and a Hawaii longline limited access permit have an exception to fishery restrictions on the retention on bigeye tuna in the WCPO and may continue to land fish in Hawaii, if NMFS prohibits catch and retention of bigeye tuna in the WCPO when the fishery reaches the U.S. WCPO limit. Federal regulations prohibit commercial fishing within marine national monuments. From early 2002 (67 FR 4369) until February 3, 2016 (81 FR 5619) and again from September 20, 2017 (82 FR 43908) until July 6, 2021 (86 FR 36239) fishing within the Large Vessel Prohibited Area (LVPA) for vessels greater than 50 feet in length (generally within 50 nm of emergent lands) was prohibited. Since July 6, 2021, U.S. large longline vessels that hold a Federal American Samoa longline limited entry permit may fish within the LVPA to approximately 12-17 nm from the shoreline around Swains Island, Tutuila, and the Manua Islands. Figure 7 shows the distribution of fishing effort by the American Samoa deep-set longline fleet in millions of hooks in years 2008-2017.

The American Samoa pelagic longline fishery is managed as a limited access fishery with a maximum of 60 vessel permits. Effort in the American Samoa deep-set longline fishery peaked in 2007, when 29 vessels participated and deployed 5,920 sets with approximately 17,554,000 hooks (NMFS 2015). Since that time, fishery statistics across all categories have generally declined; in 2021, 11 vessels made 40 trips and deployed 1,484 sets with 4.2 million hooks (WPFMC 2022). Total longline fleet revenue was was estimated at $2.55 million in 2021.

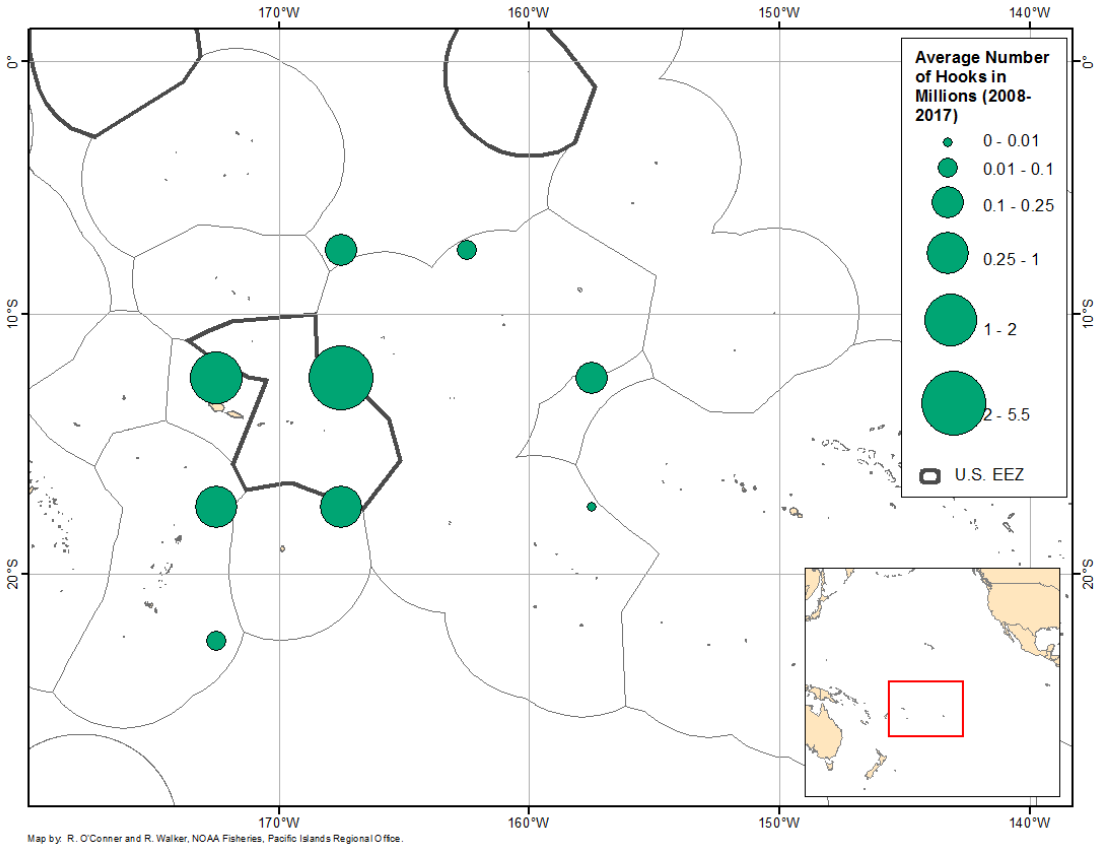


Figure 16. Average number of hooks (millions) set by American Samoa longline vessels, 2008-2017, per five degree square.

3.6 Administrative and Regulatory Process

NMFS and the Council developed the processes in the measure to ensure that both bodies administer the U.S. participating territories' use, assignment, allocation, and management of catch limits of pelagic MUS, or fishing effort limits, through agreements with U.S. vessels permitted under the Pelagics FEP consistent with Magnuson-Stevens Act and WCPFC management mandates. NMFS and the Council conduct several administrative processes relevant to managing territorial catch and effort limits, including but not limited to monitoring the effectiveness of catch or effort limits; in-season catch monitoring; enforcement; and publication of catch limits, specified fishing agreements, and closures.

NMFS determines the status of internationally managed stocks through stock assessments produced by various scientific bodies. These bodies provide advice to the WCPFC in the WCPO and IATTC in the EPO. NMFS reviews the assessments and notifies the appropriate Council if overfishing is occurring or if a stock is overfished. If the Council and NMFS consider that the stock is overfished due to international fishing pressure, NMFS and the Councils work with the State Department to put management measures into place internationally. If U.S. fisheries are responsible for the stock status, Councils and NMFS develop management measures to end overfishing. Additionally, the Council includes information from each newly assessed stock in its annual SAFE report. This work would not change under the Alternatives.

NMFS PIFSC will ensure the efficacy of an in-season accountability measure by forecasting and monitoring striped marlin catches landed by US vessels inside the WCPFC Convention Area and north of the Equator. PIFSC has performed

Regarding enforcement, the NOAA Office of Law Enforcement (OLE) and U.S. Coast Guard (USCG) monitor vessel compliance with applicable regulations and laws, including territorial catch/effort or allocation limits, through vessel monitoring systems and vessel boarding at sea.

Publication of specified fishing agreements occurs after receipt of the agreement from vessels party to the agreement and territorial governments. The Council and NMFS review each agreement for consistency with the Pelagics FEP and implementing regulations, the Magnuson-Stevens Act, and other applicable laws. Then, NMFS authorizes the agreements through notice in the Federal Register. NMFS and the Council have reviewed and NMFS has authorized one or two specified fishing agreements under the Pelagics FEP every year since 2014. The territorial catch, effort and allocation limit measure's implementing regulations at 50 CFR 665.819 require that specified fishing agreements direct funds to the WP SFF to support fisheries development projects identified in a U.S. participating territory's MCP, or that vessels operating under such agreements must land in the territory to which the agreement applies. Pursuant to Section 204(e) of the Magnuson-Stevens Act, the Council, in close coordination with a particular U.S. participating territory, would use the WP SFF to implement fishery development projects identified in that territory's MCP. The administration of this funding is not considered part of the proposed action, and is analyzed as project details become available. The requirements for fishing agreements, and the approval and notice process would not change under the Alternatives.

NMFS publishes notice of closures of the WCPO in the Federal register seven days before we expect the fishery to reach the U.S. limit in the WCPO, territorial catch limits, or an allocation limit authorized through a specified fishing agreement. NMFS also sends letters to notify permit holders of impending closures. NMFS has closed the WCPO bigeye tuna fishery in 2015, 2016, and 2017 for 65, 48, and 39 days, respectively, (Ayers et al. 2018), through *Federal Register* notices.

NMFS also conducts management activities relevant to managing the longline fisheries as a whole. These include the ESA listing process, the ESA consultation process, and conducting status reviews and recovery planning under the ESA. This management processes would continue under the proposed action without change.

3.7 Resources Eliminated from Detailed Study

The proposed action and potential Alternatives would not affect resources of scientific, historic, cultural, or ecological importance in the PIR, other than those described above. Longline fishing activities are not known to result in adverse effects to scientific, historic, archeological or cultural resources because fishing activities occur generally miles offshore. Therefore, the proposed action is not likely to affect historic resources and topics will not be considered further in this EA.

NMFS is not aware of studies that show effects from pelagic longline fisheries to species fecundity or negative predator/prey relationships that result in adverse changes to food web dynamics. Without management to ensure fishing is sustainable, the removal of top predator pelagic species such as bigeye tuna, yellowfin tuna, and billfish above natural mortality rates has the potential to cause wide-ranging change to ecosystem functions, biodiversity, and habitats. However, both international and domestic catches are managed throughout the Pacific. NMFS expects such management to improve stock status and

prevent changes to ecosystem function. Therefore, NMFS does not analyze effects on biodiversity and/or ecosystem function in this assessment

4 ENVIRONMENTAL EFFECTS OF THE ALTERNATIVES

This chapter describes the potential effects of each Alternative on the components of the affected environment or other socio-economic elements identified in Chapter 3. Our analysis relies on the information described in Chapters 2 and 3 to evaluate the impacts of the Alternatives. The action to establish catch and retention limits for striped marlin does not have the potential to affect the physical environment and may render positive impacts to the striped marlin stock, which is overfished and experiencing overfishing. Economic consequences arise due to removal of a portion of striped marlin landings, and resulting impacts on market demands, with Alternatives that limit retained catch. The domestic implementation of catch limits on an internationally overfished stock may affect target and non-target species (including bycatch), protected resources, marine habitat, fishery participants, fishing communities, and the management setting.

Potential effects, or impacts, of the Alternatives considered in this EA are classified in terms of scale, duration, magnitude, and whether the effects are beneficial or adverse. Scale refers to the geographic extent of the proposed action, and will be classed as either small-scale, minor, or major. The duration of the effects will be either short-term, long-term, or permanent. Effect magnitude is classed as one of: no effect, negligible, minor, moderate, or major. For adverse effects, the three dimensions (scale, duration, and magnitude) will be considered to determine if the effect is significant. For an effect to be generally considered to meaningfully contribute to a significant impact, the scale would be major, the duration would be long-term or permanent, and the magnitude would be major. The decision maker has the discretion to consider the interaction of the classifications of all three dimensions together to determine significance of an impact.

4.1 Potential Effects of Alternative 1: No Action (Status Quo)

The no action Alternative would be expected to have no effect in the short- or long-term on physical resources, biological resources, socio-economic setting, or management settings as we would expect no change in the recent pattern of fishing as described in Sections 3.2. We briefly summarize the status quo, or baseline, conditions associated with this no action Alternative to allow clear contrast between this and other Alternatives in terms of scale, duration, and magnitude of effects.

4.1.1 Effects on Biological Resources

Under the no action Alternative (Alternative 1), we do not expect a change in the operation of the Hawaii longline fisheries or other U.S. fisheries that catch striped marlin. Therefore, we do not expect any changes to the effect of the existing fisheries on either target or protected species in a way not already analyzed and authorized in biological opinions on the operation of the Hawaii deep-set (NMFS 2014, NMFS 2017, NMFS 2022), shallow-set longline fisheries (NMFS 2019), and other fisheries (see Section 3.3). No bird species protected under the MBTA interact with these fisheries. These fisheries are subject to observer coverage and reporting requirements, and must be conducted using a suite of mitigation measures to reduce the number and severity of protected species interactions (see 50 CFR 665 Subpart F and 50 CFR § 229.37).

Marine mammals not protected as endangered species exist in the action area and are effected by longline fisheries. According to the 2022 List of Fisheries (87 FR 229, May 19, 2022), the Hawaii deep-set

longline fishery is a Category I fishery, and the Hawaii shallow-set longline fishery, the Hawaii Troll fishery, and the American Samoa longline fishery are Category II fisheries. As described in Section 3.3.2, the Hawaii deep-set fishery has been issued a permit authorizing incidental taking on non-ESA listed marine mammals as their taking will have negligible impact on the affected species.

We also do not expect effects to essential fish habitat or vulnerable marine or coastal ecosystems, because longline fishing occurs in deep water away from these habitats and ecosystems, and longline fishing gear does not contact the bottom. If longline gear are lost, they may drift into essential fish habitats, or vulnerable marine or coastal ecosystems, including shallow and deep coral ecosystems; however, the relatively low volume of monofilament line associated with the gear would be expected to have negligible impacts on these habitats and ecosystems over the short-term.

Longline fisheries would have no to negligible effects on marine sanctuaries or monuments, as commercial longline fisheries are prohibited in these areas. The only potential for impact is from lost longline gear, which could drift into and be deposited in sanctuaries or monuments. As described previously, the deposit of longline gear would be expected to have negligible impacts on these areas over the short-term.

Longline fisheries are subject to observer coverage and reporting, and must be conducted using a suite of mitigation measures to reduce the number and severity of protected species interactions (see 50 CFR 665 Subpart F and 50 CFR § 229.37). Additionally, we do not expect changes to affects to target and non-target stocks as described in Section 3.1 under the status quo.

Annual fishing effort for Hawaii-based U.S. shallow-set and deep-set longline fisheries have seen steady, but slight, increases (Table 12 and 13) over the last five years. The catch per effort of target and non-target species, including striped marlin, have stabilized, and, in some cases, declined for U.S. longline fisheries. Therefore, we would not expect a significant change from baselines described in Sections 3.1 and 3.2.

As catches of striped marlin are likely to not change under this no action Alternative, overfishing will persist for the WCNPO striped marlin stock, and the United States will have contributed about 14.8% of the relative impact, as described in Section 2.1. This Alternative would not account for relative impacts of U.S. vessels on international overfishing under any interpretation, nor is it based on proportional reductions in catch consistent with achieving international rebuilding targets.

There are no impacts to any other physical or biological resources from this status quo Alternative that would be considered substantial. There are also no known issues with the introduction, spread or support of the continued existence of noxious weeds or non-native species under this Alternative.

4.1.2 Effects on Socio-economic Setting

As this is the no action Alternative, we expect no effects on fishery participants and fishing communities. Catches of striped marlin from U.S. fisheries would remain similar to values presented in Table 2 (Section 2.1).

As presented in Section 2.1, U.S. pelagic fisheries in the WCNPO averaged 356 t of landed striped marlin from 2016-2020 (Table 2). Striped marlin landings ranged from 287 to 458 t in those years. For our description of baseline socio-economic setting, we assumed that the more recent 2016-2020 average longline landings would be a good approximate of future years catch. Combining these recent average longline landings (356 t) with the recent landing value of $2.54/lb for striped marlin (WPFMC 2022) suggests approximately $1,993,500 is the base value of WCNPO striped marlin landings in the longline fishery. Even though striped marlin is not a target species, it does have market value. There is a niche

market for striped marlin in certain seasons when the flesh is “pumpkin colored”. Based on recent economic data, prices peak for striped marlin in February and March, and again in July-September.

These longline fisheries do not have a large adverse environmental effect on stocks of fish that may be caught by subsistence fisherman or on other marine resources that may be targeted for subsistence consumption. NMFS is not aware of subsistence harvests occurring in these fisheries. The fisheries do not pollute marine waters and, thus, do not have adverse effects to human health or on marine life. NMFS and the Council manage fisheries through Federal regulations that are intended to conserve marine resources and habitats to enhance the economic and social well-being of fishing communities, including members of minority populations and low-income populations. The proposed action under this no action Alternative would not change the manner in which these longline fisheries operate. The regulations apply equally to all holders of Hawaii Longline limited entry permits and so this Alternative will not disproportionately affect any particular subset of these fishing communities or the community at large, including minority or low-income communities. For these reasons, we find this Alternative to have no effect in the short- or long-term on environmental justice including subsistence fisheries and consumption.

4.1.3 Effects on Administrative and Regulatory Setting

With this no-action Alternative, we expect no changes to the administrative and regulatory setting as described in Section 3.6.

4.1.4 Other Effects

The no-action Alternative is not expected to have an overall significant effect on any other aspect of the human environment, or a substantial impact on any physical or biological resources. Because there are no expected significant effects, this Alternative would not be controversial, although would not meet the requirements of Magnuson-Stevens Act Section 304(i) regarding required actions to address the U.S. proportion of international fishing impacts for this striped marlin stock, as it is overfished and experiencing overfishing. There is little uncertainty about the effects of this Alternative, as recent year fishing patterns have declined in recent years. One source of uncertainty on future fishing patterns is the ongoing impacts of the current economic environment on operational costs to vessels. Several fisheries within the PIR have experienced significant increases in costs for pelagic fishing, driven largely by fuel costs that, prior to 2022, comprised 50% of trip costs (WCPFC 2022). The high cost of operation likely influences fishing activities and economic performance by restricting fishery effort. As costs hit record highs in 2022, we expect to see an effect within the longline fishery and total striped marlin catches for reasons outside of the scope of this action.

4.2 Potential Effects of Alternative 2

Under Alternative 2, the Council would set a retention limit of 443 t for Hawaii longline fisheries, which is 97% of the CMM-2010-01 catch limit of 457 t. This retention limit will ensure that the total catch in U.S. fisheries will not exceed the catch limit, as catches in MHI troll and handline fisheries are not available inseason and have accounted for less than 3% of total U.S. catches in recent years. Retention of striped marlin once this limit was projected to be reached would be prohibited for the remainder of the fishing year. While there is uncertainty projecting what future striped marlin catches will be, we do not anticipate that this limit will be reached for WCNPO striped marlin in most years. However, while this Alternative is not likely to have a significant impact on the current operation of longline fisheries, when combined with other management actions that are expected to reduce striped marlin catch (Section 2.2.2) it meets the requirements of Magnuson-Stevens Act Section 304(i) regarding required actions to address the relative contribution of U.S. fisheries to international overfishing of this striped marlin stock.

Alternative 2 is expected to have either no or insignificant effect in the short- or long-term on physical resources, biological resources, socio-economic setting, or management settings as we would expect no change in the recent pattern of fishing as described in Sections 3.2, unless the retention limit for striped marlin was projected to be reached. In the case of a prohibition on striped marlin retention, we would expect insignificant negative effects to economic performance of longline fisheries, negligible beneficial effects to the WCNPO striped marlin stock, and no other effects. We briefly summarize the anticipated effects of Alternative 2 relative to the no action Alternative in terms of scale, duration, and magnitude of effects.

4.2.1 Effects on Biological Resources

A retention limit of 443 t for striped marlin under Alternative 2 is expected to have no impact on operation of the Hawaii Longline fisheries or other fisheries that catch striped marlin, besides the potential for non-retention of WCNPO striped marlin if the retention limit is projected to be reached. Therefore, we expect that, similar to Alternative 1, there will be no changes to the operation or effect of these fisheries on target, non-target, protected species in a way not already analyzed and authorized as described in Section 4.1.1.

Marine mammals not protected as endangered species exist in the action area and are effected by longline fisheries. According to the 2022 List of Fisheries (87 FR 229, May 19, 2022), the Hawaii deep-set longline fishery is a Category I fishery, and the Hawaii shallow-set longline fishery, the Hawaii Troll fishery, and the American Samoa longline fishery are Category II fisheries. As described in Section 3.3.2, the Hawaii deep-set fishery has been issued a permit authorizing incidental taking on non-ESA listed marine mammals as their taking will have negligible impact on the affected species.

We also do not expect effects to essential fish habitat or vulnerable marine or coastal ecosystems, because longline fishing occurs in deep water away from these habitats and ecosystems, and longline fishing gear does not contact the bottom. If longline gear are lost, they may drift into essential fish habitats, or vulnerable marine or coastal ecosystems, including shallow and deep coral ecosystems; however, the relatively low volume of monofilament line associated with the gear would be expected to have negligible impacts on these habitats and ecosystems over the short-term.

Longline fisheries would have no to negligible effects on marine sanctuaries or monuments, as commercial longline fisheries are prohibited in these areas. The only potential for impact is from lost longline gear, which could drift into and be deposited in sanctuaries or monuments. As described previously, the deposit of longline gear would be expected to have negligible impacts on these areas over the short-term.

The striped marlin catch limit in Alternative 2 would ensure that U.S. longline fisheries comply with the International WNCPO striped marlin retained catch limit specified in WCPFC CMM 2010-01. This Alternative will address the United States relative contribution to international overfishing because it is coupled with domestic management measures anticipated to further reduce striped marlin catch (Section 2.2.2). Based on the 2019 assessment and lack of catch reductions by other fishing nations, we anticipate that this Alternative will provide only negligible benefit to the WCNPO striped marlin stock in the short-term.

Alternative 2 allows for catches of striped marlin to remain similar to recent historical landings for U.S. longline fishery catches in the WCNPO. The largest year of reported retained catch of WCPFC striped marlin was 458 t in 2019, which was significantly higher than any other total landings in the last 10 years. Even if the retention limit was reached due to a high catch year like 2019, and the retention of striped

marlin prohibited for U.S. longline fisheries, the pattern of past striped marlin catches by month in the fishery (Figure 7) suggests that closure is likely to occur later in the year. In addition, with the anticipated reduction in catches of striped marlin with the prohibition of wire leaders in the Hawaii deep-set longline fishery (87 FR 25153), we do not anticipate this limit would be reached.

There are no impacts to any other physical or biological resources from Alternative 2 that would be considered substantial. There are also no known issues with the introduction, spread or support of the continued existence of noxious weeds or non-native species under this Alternative.

4.2.2 Effects on Socio-economic Setting

Under Alternative 2, Hawaii deep-set and shallow-set longline vessels catching the WCNPO stock of striped marlin would be subject to a 443 t retention limit of striped marlin each year to ensure that these fisheries, combined with the catches of the MHI troll and handline fisheries will not exceed 457 t. Once the 443 t retention limit for the longline fisheries is projected to be reached, all striped marlin caught on longline gear in the WCNPO would have to be discarded for the remainder of the year. The prohibition on striped marlin retention would not apply to troll or handline fisheries.

We expect no effects on fishery participants and fishing communities unless the retention limit is reached, and negligible negative effects over the short term if it is. We anticipate that catches of striped marlin from U.S. longline fisheries would remain similar to recent averages (Figure 6), although we anticipate a drop from these catch levels due to the prohibition of wire leaders in the Hawaii deep-set fishery (87 FR 25153). As discussed in Section 4.1.2, the current value of recent average longline landings of WCNPO striped marlin is about $2.0 million. This value is based on recent average landings of 356 t, which is 87 t below the catch limit established under Alternative 2.We assume socio-economic effects of reaching the no-retention limit in these fisheries is low, because despite the limit being exceeded in 2019, the recent U.S. longline landings of WCNPO striped marlin have well below the retention limit for this Alternative (Table 2). Additionally, the peak months in terms of striped marlin price are February and March, and July to September. If the fishery does close, it will be late in the year after historically peak prices for the species at market.

The catches in 2019 likely represent the highest catches of WCNPO striped marlin we could anticipate in the future, given past catches and the prohibition of wire leaders. If catches were to reach the levels seen in 2019, retention of striped marlin would be prohibited and the fishery would catch but be unable to retain 15 t of catch under Alternative 2. The loss of 15 t of catch, based on a 2021 average price of $2.54 per pound, would be about $84,000 across all longline vessels licensed in the Hawaii deep-set and shallow-set longline fisheries (147 in August 2022), or about $572 per vessel. This is a conservative estimate, as prices peak from February to March and again July to September. December historically has the lowest price per pound for striped marlin.

As described for Alternative 1 (Section 4.1.2), these longline fisheries do not have a large adverse environmental effect on stocks of fish that may be caught by subsistence fisherman or on other marine resources that may be targeted for subsistence consumption. The fisheries do not pollute marine waters and, thus, do not have adverse effects to human health or on marine life. NMFS and the Council manage fisheries through Federal regulations that are intended to conserve marine resources and habitats to enhance the economic and social well-being of fishing communities, including members of minority populations and low-income populations. The proposed action under Alternative 2 would not change the manner in which these longline fisheries operate, except for potentially prohibiting striped marlin retention late in the year. The regulations apply equally to all holders of Hawaii Longline limited entry

permits and so this Alternative will not disproportionately affect any particular subset of these fishing communities or the community at large, including minority or low-income communities. Like the no action alternative, we anticipate Alternative 2 to have no effect in the short- or long-term on environmental justice including subsistence fisheries and consumption.

4.2.3 Effects on Administrative and Regulatory Setting

With this Alternative, because it is unlikely that the retention limit will be reached, we expect no or negligible effects to the administrative and regulatory setting, as described in Section 3.6. If the retention limit was reached, there could be negligible short-term effects related to an increased need to communicate a retention prohibition to the fleet, and enforce that limit. Enforcement activity would likely not need to be increased, only adding checks during routine enforcement activities to ensure that the retention prohibition was being followed. This Alternative may be controversial among Hawaii-based longline fishermen, as it would require the regulatory discard of dead fish if the retention limit was reached. This Alternative would also potentially provide negligible short-term benefits to the WCNPO striped marlin stock, in terms of preventing overfishing and ensuring sustainability, although the participation of other nations would be required for these benefits to be significant.

4.2.4 Other Effects

Alternative 2 is expected to have no significant effect on any other aspect of the human environment, or a substantial impact on any physical or biological resources. Because the effects of the Alternative are limited to U.S. longline fisheries, effects will be limited to individuals fishing in these fisheries. The economic effects of a prohibition on striped marlin retention would be expected to be minor and restricted to near the end of the calendar year and thus short-term. As discussed in Section 3.5, current economic conditions may also have an impact on striped marlin catch and longline fisheries as a whole. As the longline fishery itself would not be limited if the striped marlin retention limit was reached, there would be no other expected effects of this Alternative.

4.3 Potential Effects of Alternative 3

Under Alternative 3, the Council would set a retention limit for Hawaii-based longline fisheries of 397 t for striped marlin caught in WCNPO by Hawaii longline fisheries, and overall catch limit of 409 t. This retention limit is 88% of the CMM-2010-01 catch limit, and was calculated by accounting for both the relative impact of U.S. fisheries on total international catches and the reporting challenges within the MHI troll and handline fisheries. Alternative 3 interprets relative impact to include estimates of a nation's mortality contributions in a given fishery, and does not consider the impacts of other management actions or anticipated impacts of other management actions. Retention of striped marlin once this limit was projected to be reached would be prohibited for the remainder of the fishing year. While there is uncertainty projecting what future striped marlin catches and economic value of catches will be, we do not anticipate that this limit will be reached for WCNPO striped marlin in most years given recent low catches and the prohibition of wire-leaders in the Hawaii deep-set longline fishery (87 FR 25153). Alternative 3 is not likely to have a significant impact on the current operation of longline fisheries and, like Alternative 2, also meets the requirements of Magnuson-Stevens Act Section 304(i).

Alternative 3, like Alternatives 1 and 2, is expected to have either no or insignificant effect in the short- or long-term on physical resources, biological resources, socio-economic setting, or management settings as we would expect no change in the recent pattern of fishing as described in Sections 3.2, unless the retention limit for striped marlin was projected to be reached. In the case of a prohibition on striped marlin retention under Alternative 3, we would expect insignificant negative effects to economic

performance of longline fisheries, insignificant beneficial effects to the WCNPO striped marlin stock, and no other effects. We briefly summarize the anticipated effects of Alternative 3 relative to the no action Alternative in terms of scale, duration, and magnitude of effects.

4.3.1 Effects on Biological Resources

A retention limit of 397 t for striped marlin under Alternative 3 is expected to have no impact on operation of the Hawaii Longline fisheries or other fisheries that catch striped marlin, besides the potential for non-retention of WCNPO striped marlin if the retention limit is projected to be reached. Therefore, we expect that, similar to Alternative 1, there will be no changes to the operation or effect of these fisheries on target, non-target, protected species in a way not already analyzed and authorized as described in Section 4.1.1. Marine mammals not protected as endangered species exist in the action area and are effected by longline fisheries. According to the 2022 List of Fisheries (87 FR 229, May 19, 2022), the Hawaii deep-set longline fishery is a Category I fishery, and the Hawaii shallow-set longline fishery, the Hawaii Troll fishery, and the American Samoa longline fishery are Category II fisheries. As described in Section 3.3.2, the Hawaii deep-set fishery has been issued a permit authorizing incidental taking on non-ESA listed marine mammals as their taking will have negligible impact on the affected species.

We also do not expect effects to essential fish habitat or vulnerable marine or coastal ecosystems, because longline fishing occurs in deep water away from these habitats and ecosystems, and longline fishing gear does not contact the bottom. If longline gear are lost, they may drift into essential fish habitats, or vulnerable marine or coastal ecosystems, including shallow and deep coral ecosystems; however, the relatively low volume of monofilament line associated with the gear would be expected to have negligible impacts on these habitats and ecosystems over the short-term.

Longline fisheries would have no to negligible effects on marine sanctuaries or monuments, as commercial longline fisheries are prohibited in these areas. The only potential for impact is from lost longline gear, which could drift into and be deposited in sanctuaries or monuments. As described previously, the deposit of longline gear would be expected to have negligible impacts on these areas over the short-term.

This Alternative 3 catch limit corresponds to analyses presented in Section 2.1 and 2.2.3. The catch limit for this Alternative is based on phased catch reductions (Broadziak 2021). There is no international agreement on what catch reductions are necessary to rebuild the WCNPO striped marlin stock. Adopting Alternative 3, without other international fishing nations adopting similar catch reductions, will not end overfishing based on the projections from the 2019 assessment. We anticipate that this Alternative will provide only negligible benefit to the WCNPO striped marlin stock in the short-term.

As discussed in Section 2.2.3, Alternative 3 also allows for catches of striped marlin to remain largely unchanged for U.S. fisheries. The largest year of reported retained catch of WCPFC striped marlin was 458 t in 2019, which is the highest year of reported landings in the last 10 years.

Even if the retention limit was reached due to a high catch year like 2019, and the retention of striped marlin prohibited for U.S. longline fisheries, the pattern of past striped marlin catches by month in the fishery (Figure 7) suggests that closure is likely to occur later in the year. In addition, with the anticipated reduction in catches of striped marlin with the prohibition of wire leaders in the Hawaii deep-set longline fishery (87 FR 25153), we do not anticipate this limit would be reached.

There are no impacts to any other physical or biological resources from Alternative 3 that would be considered substantial. There are also no known issues with the introduction, spread or support of the continued existence of noxious weeds or non-native species under this Alternative.

4.3.2 Effects on Socio-economic Setting

As described in prior sections, striped marlin is non-target catch for U.S. longline fishing vessels which target other species, and a retention limit for striped marlin will not impact the operation of these fisheries. Compared to Alternative 1 (status quo), Alternative 3 establishes a catch limit for striped marlin retention in the WCNPO by Hawaii-based longline fisheries. As with Alternative 2 (Section 4.2.2), we do not expect these longline fisheries to exceed the retention limit in the future. The recent average retained catch (Table 2) is 41 t less than the retention limit under Alternative 3, and catches since 2019 have been well below this limit. Based on recent catches and exceeding the retention and catch limit in 2019, we expect the retention limit would be reached as much as once in five years, or 20% of the time. We also expect catches to drop with the prohibition of wire leaders in 2022, and so the probability catches will reach the retention limit is likely lower than 20%. Under Alterative 3, we expect no effect on socio-economic setting unless the retention limit is reached, and a negligible to minor effect over the short-term if it is.

Even though we think there is a less than 20% chance the retention limit under Alternative 3 would be reached, reaching the 397 t retention limit under this Alternative will be more likely than Alternative 2. The catches in 2019 likely represent the highest catches we could anticipate in the future, given past catches and the prohibition of wire leaders. If catches were to reach the levels seen in 2019, retention would be prohibited earlier and the fishery would lose 61 t of striped marlin catch. The loss of 61 t of catch, based on a 2021 average price of $2.54 per pound, would be about $341,600 across all longline vessels licensed in the Hawaii deep-set and shallow-set longline fisheries (147 in August 2022), or about $2,325 per vessel. Given recent information, we think a smaller loss of catch would be more likely if the retention limit was reached, likely late in the calendar year. Average catches in the second half of December from 2016-2020 have been about 21 t. The loss of 21 t of striped marlin would reduce landed value of the fishery by about $117,600, or about $800 per vessel. We consider these economic losses to be negligible to minor over the short-term. This is a conservative estimate, as prices peak from February to March and again July to September. December historically has the lowest price per pound for striped marlin.

As described for Alternative 1 (Section 4.1.2), these longline fisheries do not have a large adverse environmental effect on stocks of fish that may be caught by subsistence fisherman or on other marine resources that may be targeted for subsistence consumption. The fisheries do not pollute marine waters and, thus, do not have adverse effects to human health or on marine life. NMFS and the Council manage fisheries through Federal regulations that are intended to conserve marine resources and habitats to enhance the economic and social well-being of fishing communities, including members of minority populations and low-income populations. The proposed action under Alternative 3 would not change the manner in which these longline fisheries operate, except for potentially prohibiting striped marlin retention late in the year. The regulations apply equally to all holders of Hawaii Longline limited entry permits and so this Alternative will not disproportionately affect any particular subset of these fishing communities or the community at large, including minority or low-income communities. Like the no action Alternative, we anticipate Alternative 3 to have no effect in the short- or long-term on environmental justice including subsistence fisheries and consumption.

4.3.3 Effects on Administrative and Regulatory Setting

With this Alternative, because it is unlikely that the retention limit will be reached, we expect no or negligible effects to the administrative and regulatory setting, as described in Section 3.6. If the retention limit was reached, there could be negligible short-term effects related to an increased need to communicate a retention prohibition to the fleet, and enforce that limit. Enforcement activity would likely not need to be increased, only adding checks to ensure no striped marlin were retained during routine enforcement activities. This Alternative may be controversial among Hawaii-based longline fishermen, as it would require the regulatory discard of dead fish if the retention limit was reached. This Alternative would also potentially provide negligible short-term benefits to the WCNPO striped marlin stock, in terms of preventing overfishing and ensuring sustainability, although the participation of other nations would be required for these benefits to be significant.

4.3.4 Other Effects

Alternative 3, like Alternatives 1 and 2, is expected to have no significant effect on any other aspect of the human environment, or a substantial impact on any physical or biological resources. Because the effects of the Alternative are limited to U.S. longline fisheries, effects will be limited to individuals fishing in these fisheries. The economic effects of a prohibition on striped marlin retention would be expected to be minor and restricted to near the end of the calendar year and thus short-term. As discussed in Section 3.5, current economic conditions may also have an impact on striped marlin catch and longline fisheries as a whole. As the longline fishery itself would not be limited if the striped marlin retention limit is reached, there would be no other expected effects of this Alternative.

4.4 Potential Effects of Alternative 4

Under Alternative 4, NMFS would prohibit retention of striped marlin caught in WCNPO by Hawaii longline fisheries. This Alternative exceeds both the CMM-2010-01 catch limit and the requirements of Magnuson-Stevens Act Section 304(i) regarding required actions to address the U.S. proportion of international fishing impacts for this striped marlin stock. This Alternative was included to allow for an evaluation of the most extreme action the U.S. could take to address the status of the stock. Alternative 4 is not likely to have a significant impact on the current operation of longline fisheries and, like Alternative 2 and 3, also meets the requirements of Magnuson-Stevens Act Section 304(i).

Alternative 4, like the previously described Alternatives, is expected to have either no or insignificant effect in the short- or long-term on physical resources, biological resources, or management settings as we would expect no change in the recent pattern of fishing as described in Sections 3.2. However, unlike the previous Alternatives, Alternative 4 would be expected to have a minor negative short term impact on the socio-economic setting – via direct economic losses to fishermen – and a negligible positive short-term benefit to the WCNPO striped marlin stock of a complete prohibition on the retention of striped marlin in longline fisheries. We briefly summarize the anticipated effects of Alternative 4 relative to the no action Alternative in terms of scale, duration, and magnitude of effects.

4.4.1 Effects on Biological Resources

Under Alternative 4, retention of WCNPO striped marlin in the Hawaii longline fisheries would be prohibited. This Alternative exceeds the requirements of WCPFC CMM-2010-01 and the Magnuson-Stevens Act Section 304(i). NMFS does not expect a change in the operation of the Hawaii longline fisheries that would affect target, other non-target, or protected species in a way not already analyzed and authorized as described in Section 4.1.1

Marine mammals not protected as endangered species exist in the action area and are effected by longline fisheries. According to the 2022 List of Fisheries (87 FR 229, May 19, 2022), the Hawaii deep-set longline fishery is a Category I fishery, and the Hawaii shallow-set longline fishery, the Hawaii Troll fishery, and the American Samoa longline fishery are Category II fisheries. As described in Section 3.3.2, the Hawaii deep-set fishery has been issued a permit authorizing incidental taking on non-ESA listed marine mammals as their taking will have negligible impact on the affected species.

We also do not expect effects to essential fish habitat or vulnerable marine or coastal ecosystems, because longline fishing occurs in deep water away from these habitats and ecosystems, and longline fishing gear does not contact the bottom. If longline gear are lost, they may drift into essential fish habitats, or vulnerable marine or coastal ecosystems, including shallow and deep coral ecosystems; however, the relatively low volume of monofilament line associated with the gear would be expected to have negligible impacts on these habitats and ecosystems over the short-term.

Longline fisheries would have no to negligible effects on marine sanctuaries or monuments, as commercial longline fisheries are prohibited in these areas. The only potential for impact is from lost longline gear, which could drift into and be deposited in sanctuaries or monuments. As described previously, the deposit of longline gear would be expected to have negligible impacts on these areas over the short-term.

Alternative 4 represents the most extreme action the United States could take to address international overfishing of WCNPO striped marlin. Based on the 2019 assessment (ISC 2019), even prohibiting retention of striped marlin in U.S. fisheries under Alternative 4 would not end the international overfishing of the stock. We anticipate that adopting Alternative 4 would provide, at best, a minor short-term benefit to the WCNPO striped marlin stock. Ending overfishing would require catch reductions across all international fleets catching this stock.

4.4.2 Effects on Socio-economic Setting

Alternative 4 would have a much greater socioeconomic impact relative to the impacts of the no action or other action Alternatives described previously. As referenced and presented in Section 2.1, U.S. catches of WCNPO striped marlin averaged 306 t from 2016-2020. Using 2021 prices, a complete ban on the retention of striped marlin results in an overall loss of about $2.0 million for the fishery. Across the 147 permitted longline vessels in the Hawaii deep-set and shallow-set longline fisheries in August 2022, this economic loss would be about $13,560/vessel. We consider Alternative 4 to present a minor long-term economic impact to the affected fisheries.

While striped marlin are non-target catch in existing fisheries, they are retained due to the economic value of the fish. With the at vessel mortality rate of striped marlin estimated at 52% (Section 2.4), Alternative 4 would result in dead discards without any economic benefit to U.S. fisheries. Additionally, lack of other international fishery regulations on this stock would put U.S. fisheries at an economic disadvantage compared to the fisheries of other nations.

As described for Alternative 1 (Section 4.1.2), these longline fisheries do not have a large adverse environmental effect on stocks of fish that may be caught by subsistence fisherman or on other marine resources that may be targeted for subsistence consumption. The fisheries do not pollute marine waters and, thus, do not have adverse effects to human health or on marine life. NMFS and the Council manage fisheries through Federal regulations that are intended to conserve marine resources and habitats to

enhance the economic and social well-being of fishing communities, including members of minority populations and low-income populations. The proposed action under Alternative 4 would not change the manner in which these longline fisheries operate, except for prohibiting striped marlin retention. The regulations apply equally to all holders of Hawaii Longline limited entry permits and so this Alternative will not disproportionately affect any particular subset of these fishing communities or the community at large, including minority or low-income communities. Like the no action Alternative, we anticipate Alternative 4 to have no effect in the short- or long-term on environmental justice including subsistence fisheries and consumption.

4.4.3 Effects on Administrative and Regulatory Setting

We expect negligible effects to the administrative and regulatory setting, as described in Section 3.6, of a complete prohibition on WCNPO striped marlin under this Alternative. Effects would include the need communicate the retention prohibition to the fleet, and enforce that prohibition. Enforcement activity would likely not need to be increased, only adding checks to ensure no striped marlin were retained during routine enforcement activities. This Alternative would likely be controversial among Hawaii-based longline fishermen, as it would require the regulatory discard of dead fish. This Alternative would also potentially provide negligible short-term benefits to the WCNPO striped marlin stock, in terms of preventing overfishing and ensuring sustainability, although the participation of other nations would be required for these benefits to be significant.

4.4.4 Other Effects

Alternative 4, like the previously described Alternatives, is expected to have no significant effect on any other aspect of the human environment, or a substantial impact on any physical or biological resources. Because the effects of the Alternative are limited to U.S. longline fisheries, effects will be limited to individuals fishing in these fisheries. The economic effects of a prohibition on striped marlin retention under Alternative 4 would be a minor long-term impact at the level of individual vessels (about a $13,560/vessel loss in landed value per year; Section 4.4.2). As discussed in Section 3.5, current economic conditions may also have an impact on striped marlin catch and longline fisheries as a whole. As the longline fishery itself would not be limited under Alternative 4, there would be no other expected effects.

As noted previously, prohibiting striped marlin catch in U.S. longline fisheries would not end excessive international fishing pressure on the stock, so the impact of Alternative 4 on U.S. fisheries relative to benefits to the WCNPO striped marlin stock suggest that it would not meet the purpose and need for this action, and this Alternative was developed to provide the environmental effects of the most extreme action the U.S. could take to address the status of the stock.

4.5 Potential Cumulative Effects of the Alternative

4.5.1 Cumulative Effects on Target and Non-Target Stocks

The Council has recommended NMFS implement or authorize several actions, which are presently in various stages of development and/or review before approval by NMFS that could potentially interact with this action. These include the following actions:

- Modifications to the territorial catch and/or effort and allocation limits measure for bigeye tuna to allow for multi-year limits and establishing allocation limits without catch limits;

- Requiring tori lines (bird scaring streamers) in the Hawaii deep-set fishery; and
- Revising Pacific Islands region FEP management objectives and converting the FEPs to living documents.

In general, the Alternatives considered here would result in no to negligible effects on longline fisheries, and thus would not have interactive or cumulative effects with the proposed actions listed above. Territorial allocations will maintain the status quo, so there are no expected cumulative effects. The potential requirement for tori lines would also not be expected to have cumulative effects with this action.

Regardless of which Alternative is selected and which fishery outcome occurs, the WCPFC will continue to review fishery performance, stock status, and adopt management measures that are applicable to fisheries that catch the WCNPO striped marlin stock.

None of the proposed actions under any of the three action Alternatives presented here would change fishing intensity, locations, participation, or seasonality. This measure has no anticipated significant adverse or beneficial effects on stock status of target and non-target stocks. Therefore, there are no anticipated cumulative effects on target or non-target stocks for any of the action Alternatives.

4.5.2 Cumulative Effects on Protected Resources

Through data collected from observer programs and other sources, the Council and NMFS will continue to monitor interactions between managed fisheries and protected species as well as monitoring the status of those populations. Consultations under the ESA have amounts of exempted take defined in their respective ITSs and the fisheries have either not exceeded those amounts, or when it has occurred, or other triggers have been reached, consultation has been reinitiated (see Section 3.3). The Council and NMFS will continue to conduct workshops with participation from fishermen to develop mitigation methods as appropriate, and NMFS will continue to conduct mandatory annual protected species workshops for all longline permit holders and vessel operators that teach how to identify marine mammals and how to reduce and mitigate interactions.

NMFS and the Council are supporting projects to address post-hooking mortality of oceanic whitetip sharks, leatherback turtles, and other protected species in the Hawaii longline fisheries and to improve ecosystem-based fishery management. These include:

- Improving seabird handling and release guides, lesson plans and associated outreach material for the annual protected species workshops, including production of video guides and translated materials for crew members;
- Ecosystem-based fisheries management (EBFM) project for protected species impacts assessment for the Hawaii and American Samoa longline fishery to evaluate ecosystem factors influencing bycatch in the longline fishery;
- Council recommended additional research and development of Alternative mitigation measures for the Hawaii SSLL fishery;
- Development of a line cutter that would allow for quick and safe removal of trailing gear on oceanic whitetip sharks, leatherback turtles, and other large protected species that cannot be brought on board. Trailing gear remaining on the animals increase post-hooking mortality rates.
- Development of a tag head that would allow pole deployment of tags on leatherbacks from the vessel side without having to board the turtle. This project aims to improve species-specific

post-hooking survivorship data for leatherback turtles observed in the shallow-set fishery, which are typically too large to board and do not allow for conventional tagging methods.

The proposed action is not expected to interact with any of these projects addressing post-hooking mortality of protected species.

A number of protected species are documented as occurring in the waters where the longline fisheries operate, and there are documented interactions with these fisheries that catch striped marlin. This fishery has been evaluated for impacts on protected resources and is managed in compliance with the requirements of the Magnuson-Stevens Act, the MMPA, the ESA, the MBTA, and other applicable statutes. Section 3.3 describes the baseline with respect to protected species interactions. Under the proposed Alternatives, the Hawaii longline fisheries would continue to operate under existing gear and handling measures for seabirds and sea turtles, as well as the measures implemented under the FKWTRP (50 CFR 229.37). The proposed action across all Alternatives considered would not change the manner in which the fishery operates, so interactions with the protected species are not anticipated to change in frequency or intensity. Under all Alternatives considered, NMFS will continue to monitor the longline fisheries using the methods currently in place, including electronic catch reporting, vessel monitoring systems, enforcement actions, and observers.

These fisheries, operating under the Pelagic FEP, will continue to be subject to applicable biological opinions, including regulations implementing the terms and conditions required to mitigate impacts on protected species. As noted in Section 3.2, NMFS is required to re-initiate ESA Consultation if take exceeds any ITS or another criterion for reinitiation is met.

With all Alternatives, NMFS does not anticipate any adverse effects to marine habitat, particularly critical habitat, essential fish habitat (EFH), habitat areas of particular concern (HAPC), marine protected areas (MPA), marine sanctuaries, or marine monuments. None of the FEP longline fisheries are known to have adverse effects on marine habitats, and none of the Alternatives are likely to change the fishery in any way that would lead to substantial physical, chemical, or biological alterations to marine habitats. Fishing activity would not occur in any new areas or critical habitats under the Alternatives considered. Fishing is either prohibited in the monuments, or conducted sustainably so as not to injure or destroy monument resources.

4.5.3 Cumulative Effects on the Socio-economic Setting

In accordance with the Magnuson-Stevens Act, the Council and NMFS will continue to assess the impact of management actions on fishery participants and fishing communities, and where possible, minimize negative effects while developing appropriate measures for the conservation and management of fishery resources.

The potential cumulative effects of this action on the socio-economic setting are expected to be negligible or minor. Factors affecting fishery participants and the fishing community include current and future costs of fishing supplies, fuel, and vessel maintenance as well as access to fishing grounds and competition with imported seafood. Under action Alternatives 2 and 3, unless the retention limit is reached, there will be no socio-economic impact to the longline fisheries. If the retention limit is reached, the direct effects are anticipated to be negligible or minor and short-term (Sections 4.2.2 and 4.3.2). Under Alternative 4, the effects are expected to be minor and long-term. The anticipated loses will not disproportionally impact fishery participants. As mentioned previously, fishery fixed costs, especially fuel, have increased

significantly in 2022. There is the potential for cumulative effects of this action and increasing fixed costs in the fishery that could result in reduced fishing effort now and into the future.

4.6 Additional Considerations

The longline fisheries operating under the FEP are not known to experience or cause other public health or safety-at-sea issues. The proposed rule, regardless of which Alternative was adopted, would not change the operation of the fishery in any manner. Therefore, there is no potential for other significant adverse effects to public health or safety.

There have been no identified impacts to sensitive biological resources, marine biodiversity, and/or ecosystem function from FEP longline fisheries. These fisheries operate away from coastlines and outside of marine sanctuaries or monuments and fishing gear does not contact the bottom or affect coral ecosystems. Because, under all Alternatives, the proposed action would not substantially modify vessel operations or other aspects of these fisheries, NMFS does not anticipate the proposed action would result in changes in gear types, areas fished, or fishing methods, as compared to baseline conditions. As such, NMFS expects no significant impacts on biodiversity or ecosystem function relative to baseline from the proposed action.

Cultural or archeological resources or resources important to traditional cultural and religious practices are not known to exist within the action area. NMFS is not aware of any districts, sites, structures, or objects listed in or eligible for listing in the National Register of Historic Places within areas fished by FEP longline fisheries. Longline fisheries are not known to result in adverse impacts to scientific, historic, archeological, or cultural sites. Regardless of the Alternative chosen, the proposed action would not change the fishery in any manner that would result in effects to such sites; therefore, there is no potential for loss or destruction of significant scientific, cultural, or historical resources in the marine environment.

These fisheries are not known to be introducing or spreading non-indigenous species. Because the proposed action would not substantially modify vessel operations or other aspects of these fisheries, NMFS does not anticipate it would result in the introduction or spread of non-indigenous species as compared to baseline conditions.

Climate change is expected to have similar impacts to the resources regardless of which Alternative is selected. In the coming years, the Council and NMFS will continue to monitor domestic catches of all pelagic MUS, and continue to consider information from scientifically-derived stock status reports as future catch and allocation limits are made and changes to fishery management are contemplated and implemented. Ongoing and future monitoring and research will allow fishery managers and scientists to consider impacts of climate change, fishing, and other environmental factors that are directly or indirectly affecting marine resources.

4.7 Summary of Expected Impacts

Table 13 summarizes the expected impacts of the action Alternatives we considered, relative to the no-action Alternative as described in Section 3 and 4.1

Table 13. Summary of Effects of the Alternatives

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Overview of Alternatives	Status quo with no catch or retention limit for striped marlin	Catch limit of 457 t and a retention limit of 443 t.	Catch limit of 409 t with a retention limit of 397 t.	Complete prohibition on the retention of striped marlin caught in WCNPO.

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Physical resource: Water quality	No effect.	No effect	No effect	No effect
Biological Resource: Striped Marlin	Insignificant effects	Insignificant effects. Will not end international overfishing	Same as Alt. 2.	Same as Alt. 2.
Biological Resource: Protected species (ESA, MMPA, or MBTA listed species)	Insignificant effects.	Same as Alt. 1.	Same as Alt. 1.	Same as Alt. 1.
Biological resource: Target & Non-target stocks	Insignificant effects	Same as Alt. 1.	Same as Alt. 1.	Same as Alt. 1.
Biological Resource: Essential fish habitats & Vulnerable marine or Coastal ecosystems	Insignificant effects.	Same as Alt. 1.	Same as Alt. 1.	Same as Alt. 1.
Biological Resource: National Marine Sanctuaries or Monuments	Insignificant effects.	Same as Alt. 1.	Same as Alt. 1.	Same as Alt. 1.
Biological Resource: Biodiversity or ecosystem function	Insignificant effects.	Same as Alt. 1.	Same as Alt. 1.	Same as Alt. 1.
Biological Resource: Introduction, spread or existence of noxious weeds or non-native species	No effects.	Same as Alt. 1.	Same as Alt. 1.	Same as Alt. 1.
Substantial impact to other Physical or biological resources	No.	No.	No.	No.
Socio-economic setting: Fishing industry	No effect.	Insignificant short-term effects, only if retention limit is projected to be reached; revenue loss of as much as about $572 per vessel. Otherwise, no effect.	Insignificant or minor short-term effects if retention limit is reached; revenue loss ranging from about $800 to $2,325 per vessel.	Minor long-term effects, with loss of up to $13,560 revenue per vessel per year.

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4
			Otherwise, no effect,.	
Socio-economic setting: minority or low-income communities	No effect.	Same as Alt. 1.	Same as Alt. 1.	Same as Alt. 1.
Management Setting: Mitigation and Monitoring	No effect.	Insignificant effect, only if retention limit is projected to be reached. Otherwise, no effects.	Same as Alt. 2.	Same as Alt. 2
Other actions including connected actions	No effect.	Same as Alt. 1.	Same as Alt. 1.	Projected economic losses may have cumulative effects with current high fishing costs.

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6 DRAFT PROPOSED REGULATIONS

This section contains the proposed regulations the Council deems necessary or appropriate to implement the conservation and management measures described in the FEP amendment document, based on the

Alternatives 2 or 3, which would set a specified catch limit and retention limit for WCNPO striped marlin for US longline fisheries operating with a Hawaii limited access permit.

For the reasons set out in the preamble, NMFS proposes to amend 50 CFR part 665 as follows:

PART 665 -- FISHERIES IN THE WESTERN PACIFIC

1. The authority citation for 50 CFR part 665 continues to read as follows:

Authority: 16 U.S.C. 1801 et seq.

2. In § 665.800 add paragraph (a) to read as follows:

§ 665.802 Prohibitions.

* * * * *

Non-retention date means the date upon which the Regional Administrator projects that a retention limit will be exceeded; retention of a species identified under § 665.813 is prohibited as specified under § 665.802, until the end of the fishing year.

* * * * *

3. In § 665.802 revise paragraph (uu) to read as follows:

§ 665.802 Prohibitions.

* * * * *

(uu) Fail to immediately release any captured striped marlin after the non-retention date, in violation of § 665.813(a).

* * * * *

4. In § 665.813 add paragraph (a) to read as follows:

§ 665.813 Western Pacific longline fishing restrictions.

* * * * *

(a) *Establishment of a striped marlin retention limit*

(1) There is a retention limit of 381.5 mt metric tons of striped marlin for years 2025, 2026, and 2027 in the Pacific Ocean north of 0° N latitude and west of 150° W longitude by vessels registered for use with a Hawaii longline limited access permit. Vessels are encouraged to maximize live releases, where practical, before a retention limit is met.

(2) NMFS will monitor striped marlin landings with respect to the limit established under paragraph (a)(1) of this section using longline landings, data submitted in logbooks, and other available information.

(3) When the retention limit is projected to be reached based on analyses of available information in paragraph (a)(2) of this section, the Regional Administrator shall publish a document to that effect in the Federal Register and shall use other means to notify permit holders. The document will include an advisement of a non-retention date beginning at a specified date, which is not earlier than seven days after the date of filing the non-retention date notice for public inspection at the Office of the Federal Register, until the end of the calendar year in which the retention limit was projected to be reached.

(4) Once an announcement is made pursuant to paragraph (3) of this section, a fishing vessel permitted under the Hawaii longline limited access permit may not retain on board, transship, or land striped marlin captured by longline gear in the Pacific Ocean north of 0° N latitude and west of 150° W longitude. Affected vessels are to promptly release striped marlin to the extent possible alive, and haulback in a manner that maximize post release survival while giving due consideration to the safety of crew and members; except in the following cases:

(i) Exception for striped marlin retained prior to the non-retention date. Any striped marlin already on board a U.S. fishing vessel upon the effective non-retention date may be retained on board, transshipped, and/or landed, to the extent authorized by applicable laws and regulations, provided that the striped marlin is landed within 14 days after the effective non-retention date.

(ii) Exception for striped marlin caught by vessels included in specified fishing agreements under §665.819(c) of this title. Striped marlin caught by a vessel that is included in a specified fishing agreement under §665.819(c) of this title will be attributed to the longline fishery of American Samoa, Guam, or the Northern Mariana Islands, according to the terms of the agreement to the extent the agreement is consistent with §665.819(c) of this title and other applicable laws, and will not be counted against the limit provided that:

(A) The striped marlin were not caught in the EEZ surrounding the Hawaiian Archipelago;

(B) The striped marlin were landed by a fishing vessel operated incompliance with a valid permit issued under § 660.707 or § 665.801 of this title.

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7 Regulatory Impact Review

In prep.