

Revised Swordfish Trip Limits in the American Samoa Longline Fishery

Regulatory Amendment
including an
Environmental Assessment and Regulatory Impact Review

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Abstract

The National Marine Fisheries Service (NMFS) will revise the retention limit of 10 swordfish per trip in the American Samoa deep-set longline fishery. NMFS and the Council originally established the limit as part of a suite of gear and operational requirements intended to discourage fishermen shallow-set fishing, thus reducing interactions with green sea turtles. However, the retention limit is not needed as fishery landings do not indicate that fishermen target swordfish through shallow-set fishing. This action would remove the unnecessary restriction that results in the discard of small amounts of marketable swordfish that could otherwise be supplied as seafood. The proposed action is intended to promote efficiency in the fishery.

The fishery primarily targets South Pacific albacore and lands the catch at the Pago Pago-based cannery. A smaller amount of revenue comes from sale of other species (e.g., yellowfin tuna, skipjack tuna, and swordfish) to the cannery or local market. The longline fishery is an important component of the local economy and provides a source of fish that serve culturally important roles. The fishery is faced with economic constraints and revising the swordfish retention limit could provide economic benefits.

The Council has recommended two action alternatives for revising the retention limit. This document includes an Environmental Assessment (EA) that evaluates potential environmental effects of the following alternatives:

Alternative 1: No action/status quo -- Continue to allow up to 10 swordfish to be retained per trip.

Alternative 2: Modify the swordfish retention limit to allow a vessel to retain up to 25 swordfish per trip.

Alternative 3: Remove the swordfish retention limit (preferred alternative).

ACRONYMS AND ABBREVIATIONS

ASG	American Samoa government
CMM	conservation and management measure
CPUE	catch per unit of effort
Council	Western Pacific Fishery Management Council
DMWR	American Samoa Department of Marine and Wildlife Resources
EA	environmental assessment
EEZ	Exclusive Economic Zone
EFH	essential fish habitat
EPO	eastern Pacific Ocean
ESA	Endangered Species Act
FEP	fishery ecosystem plan
FMP	fishery management plan
FR	<i>Federal Register</i>
HAPC	Habitat Areas of Particular Concern
IATTC	Inter-American Tropical Tuna Commission
ITS	incidental take statement
LVPA	large vessel prohibited area
MMPA	Marine Mammal Protection Act
MPA	Marine Protected Area
MSY	maximum sustainable yield
MUS	management unit species
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OLE	NOAA Office of Law Enforcement
PIFSC	NMFS Pacific Islands Fisheries Science Center
PIRO	NMFS Pacific Islands Regional Office
MUS	Pelagic Management Unit Species
RFMO	regional fishery management organization
SECC	South Equatorial Counter Current
SSC	Scientific and Statistical Committee
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
VMS	vessel monitoring system
WCPFC	Western and Central Pacific Fisheries Commission
WPFMC	Western Pacific Fishery Management Council
WCPO	western and central Pacific Ocean

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1 INTRODUCTION

1.1 Background

The National Marine Fisheries Service (NMFS) and the Western Pacific Fishery Management Council (WPFMC, hereafter the Council) manage fishing for pelagic management unit species (MUS) in the United States (U.S.) Exclusive Economic Zone (EEZ, or Federal waters) around American Samoa, Guam, the Commonwealth of the Northern Mariana Islands (CNMI), and Hawaii, and on the high seas by means of the Fishery Ecosystem Plan for Pelagic Fisheries of the Western Pacific (Pelagic FEP) and associated regulations as authorized by the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act; 16 U.S.C. § 1801 et seq.).

The American Samoa longline fishery targets South Pacific albacore (*Thunnus alalunga*) and other pelagic fishes landed at the Pago Pago cannery on Tutuila. The fishery contributes to the local economy and is a source of culturally important fish for the community. The fishery has faced challenging economic conditions and vessel operators have requested relief from what they consider an overly burdensome requirement that limits a fishing trip to ten swordfish. They seek to retain incidental catch of swordfish caught during longline fishing trips.

The Council has recommended NMFS modify the per-trip swordfish retention limit in the American Samoa longline fishery on the basis that the trip limit for the fishery may result in an inefficient use of fishery resources and may lead to wasteful regulatory discards and lost revenue, which are contrary to National Standards in the Magnuson-Stevens Act, including:

- National Standard 5 – Consider efficiency in the utilization of fishery resources (§600.330)
- National Standard 7 – Minimize costs and avoid unnecessary duplication (§600.340)
- National Standard 8 – Consider the importance of fishery resources to fishing communities (§600.345)

History of the swordfish retention limit in the American Samoa longline fishery

In 2009, the Council recommended Amendment 5 to the Pelagic FEP for the American Samoa longline fishery to reduce interactions between the American Samoa longline fishery and green sea turtles while enabling the American Samoa longline fishery to continue operations sustainably. NMFS implemented the final rule for Amendment 5 on August 24, 2011 (76 FR 52888).

The final rule included the following requirements for vessels over 40 ft when fishing south of the Equator:

- All hooks be set below 100 meters (m).
- Each float line must be at least 30 m long.
- At least 15 branch lines must be attached to the mainline between any two float lines attached to the mainline.
- Each branch line must be at least 10 m long.¹

¹ This requirement was not part of Amendment 5. In a September 16, 2010, Biological Opinion resulting from ESA Section 7 consultation, NMFS issued a requirement that each branch line (connected to the main line and terminating in a single baited hook) be at least 10 m long to help ensure that hooks fish deeper than 100 m from the surface. This final rule implemented that requirement.

- No branch line may be attached to the mainline closer than 70 m to any float line.
- No more than 10 swordfish may be possessed or landed during a single fishing trip.

The Council's original intention in recommending the ten swordfish per-trip retention limit was to discourage longline fishermen targeting South Pacific albacore in the deep-set fishery from switching to shallow-set fishing to reduce the potential for incidental interactions with green sea turtles. However, catch and landings data indicate that fishermen are not targeting swordfish through shallow-setting as there have been consistently low levels of landed and released or discarded swordfish before and after the retention limit (Section 3.2.1.1). As gear configurations and fishing effort would not change under the proposed action, the removal of the swordfish trip limit has no effect on sea turtle interactions.

Summary of Council actions related to the proposed changes to the American Samoa swordfish retention limit

At the 157th Council meeting on June 26-28, 2013 (78 FR 32624, May 31, 2013), held in Honolulu, Hawaii, the Council directed staff to prepare a regulatory amendment to the Pelagics FEP, and recommended a preliminary preferred alternative to remove the existing swordfish per trip limit for the American Samoa limited entry longline fishery. The Council took final action on this matter at its 172nd meeting held on March 14-16, 2018 (83 FR 7162, February 20, 2018) in Honolulu, Hawaii, again having recommended the preferred alternative of removing the swordfish retention limit. There were no public comments at either meeting.

1.2 Overview of the American Samoa Longline Fishery

The large-scale longline fishery based in American Samoa is a limited access fishery with a maximum of 60 vessels under the Federal permit program. Vessels range in size from under 40 to over 70 ft. long. The fishery primarily targets albacore for landings at the local Pago Pago cannery, although the fishery also catches and retains other tunas and pelagic management unit species (MUS) for local sale and home consumption.

1.3 Proposed Action

The proposed action would modify or remove the swordfish retention limit in the American Samoa longline fishery. All other management measures, including gear and operational restrictions, limited vessel participation, prohibited fishing areas, fishery observers, logbook reporting, and vessel monitoring systems, will remain in place and continue to apply in the fishery.

1.4 Purpose and Need for Action

The purpose of this action is to increase efficiency in the American Samoa longline fishery by eliminating wasteful regulatory discards of swordfish and associated lost revenue, which are contrary to National Standards 5, 7 and 8 in the Magnuson-Stevens Act. The need for the action is to reduce or eliminate regulatory discards resulting from the current swordfish retention limit.

1.5 Action Area

The action area is the area of operation of the American Samoa longline fishery, which includes the U.S. EEZ around American Samoa, as well as distant high seas waters south of the Equator that

are fished by vessels holding a valid longline permit. According to logbook data, longline vessels based in American Samoa operate almost exclusively south of the Equator in the western Pacific. From 2008 through 2018, less than one percent of fishing effort occurred north of the Equator, and less than one percent in the eastern Pacific for vessels that either started or ended fishing trips in American Samoa (NMFS unpublished data). In recent years, the fishery has mostly been operating in the area between 175°- 165° W and 10°- 15° S (Figure 1).

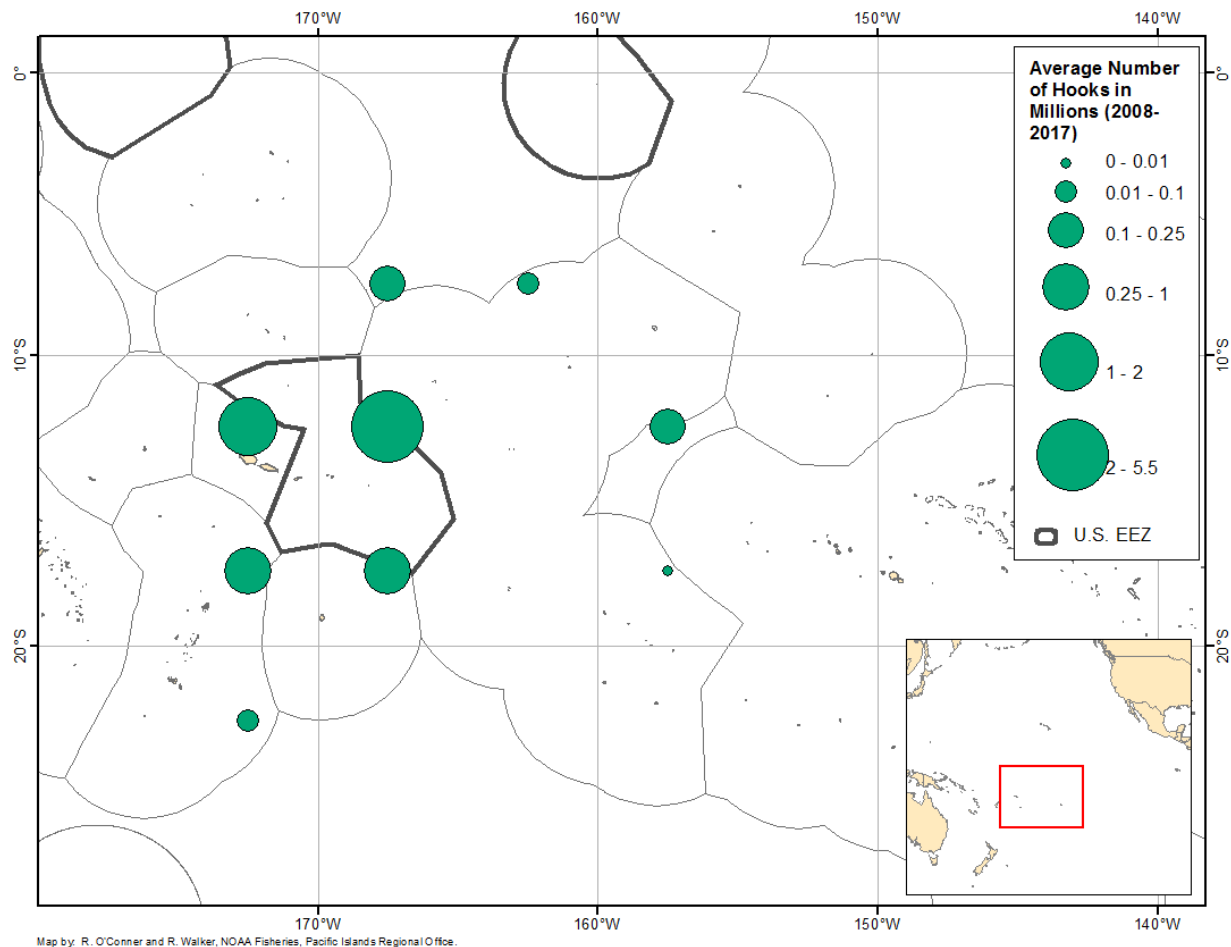


Figure 1. Operating area of the American Samoa longline fleet, shown in average number of hooks (millions) per five degree square for years 2008-2017.

1.6 Decisions to be Made

This document will support a decision by the Regional Administrator (RA) of the NMFS Pacific Island Region, on behalf of the Secretary of Commerce, whether to approve, disapprove, or partially approve the Council's recommendation. The RA will also use the information in this EA to make a determination about whether the proposed action would constitute a major Federal action that has the potential to significantly affect the quality of the human environment. If NMFS determines the action would *not* significantly affect the quality of the human environment, NMFS will prepare a Finding of No Significant Impact (FONSI). If NMFS determines the proposed action is a major Federal action that would significantly affect the quality of the human environment, NMFS would prepare an environmental impact statement before making a decision.

1.7 List of Preparers and Reviewers

Preparers:

- Thomas Remington – Fishery Analyst, Council staff
- Sarah Ellgen – Resource Management Specialist, PIRO Sustainable Fisheries Division (SFD)

Reviewers:

- Phyllis Ha, Resource Management Specialist, PIRO SFD
- Ariel Jacobs, NEPA Coordinator, PIRO
- Mark Fox, Fish and Wildlife Administrator, PIRO SFD

1.7.1 Coordination with the Public and Others

The Council includes representation by various Federal and local government agencies. In addition to NOAA, agencies that participate in the deliberations of the Council specifically include American Samoa Department of Marine and Wildlife Resources (DMWR), U.S. Coast Guard (USCG), U.S. Fish and Wildlife Service (USFWS), and U.S. Department of State, among others.

The development of the proposed action occurred in public meetings of Advisory Panels, the Science and Statistical Committee (SSC), and the Council. In addition, the Council has provided notice of the rulemaking in local media releases, newsletter articles, and on the Council's website at <http://www.wpcouncil.org>.

On June 29, 2020, NMFS solicited public comment on the proposed action and draft Environmental Assessment (EA) for this action. The comment period ended July 14, 2020. NMFS received comments from three submitters. The Council reiterated the intent of the action to reduce waste. One submitter commented that the low level of discards did not reduce seafood availability. The third submitter expressed concern about green sea turtle interactions, increased fishing pressure south of the Equator, potential leatherback turtle interactions, and the length of the comment period and need for a fishery management plan amendment. NMFS responds to the public comments in the final rule and makes minor clarifying edits in the EA to address public comments. Find the draft and final versions of this EA by searching on RIN 0648-BH61 at www.regulations.gov, or by contacting the responsible NMFS official or the Council at the above address.

2 DESCRIPTION OF THE ALTERNATIVES CONSIDERED

This section describes the alternatives for the proposed action and the expected fishery outcomes likely to occur under each alternative. Table 1 shows the potential effects for each of the proposed alternatives.

Table 1. Summary of potential effects of the alternatives.

Resource	Alternative 1	Alternative 2	Alternative 3
Physical Resources	No impact	No impact	No impact

Resource	Alternative 1	Alternative 2	Alternative 3
Biological Resources: Target and Non-Target Stocks	Minor impact on albacore and non-target stocks	Minor impact on albacore and non-target stocks; less recorded swordfish discards	Minor impact on albacore and non-target stocks; zero recorded swordfish discards
Biological Resources: Protected Species	Interactions continue to occur at current rates	Interactions continue to occur at current rates	Interactions continue to occur at current rates
Socio-economic Setting	Rates of swordfish regulatory discard remain the same, prohibiting the fish from being sold in local markets or given for use in cultural events	Reduced rates of swordfish regulatory discard, very slightly increasing revenues and the amount of fish available for cultural exchange	No swordfish regulatory discards, slightly increasing revenues and the amount of fish available for cultural exchange
Management Setting	NOAA OLE and USGS continue to monitor and enforce trip limit regulations	NOAA OLE and USGS continue to monitor and enforce trip limit regulations	No regulatory monitoring or enforcement required of the trip limit. Monitoring of gear requirements/configuration continues.

Features Common to All Alternatives

Regardless of the alternative selected, no other existing regulations for the American Samoa limited entry longline fishery, besides the swordfish retention limit, would change. Other regulations include requirements for deep-set fishing gear and deployment, logbook and observer monitoring requirements, vessel monitoring system (VMS), and other protected species mitigation and interaction monitoring measures.

The requirement that fishermen set longline hooks below 100 m depth, for example, would remain under the implementation of any of these alternatives. The USCG and the NOAA Office of Law Enforcement (OLE) would continue to enforce gear-related regulations including length of float lines and the distance between hooks and floats and other gear requirements.

2.1 Development of the Alternatives

At its 113th meeting held on June 19-20, 2013 (78 FR 32624) in Honolulu, Hawaii, the Council's SSC discussed modifying the swordfish retention limit. The SSC generated a preliminary recommendation to remove the swordfish retention limit on the American Samoa limited entry longline fishery.

At its 157th Council meeting held on June 26-28, 2013 (78 FR 32624) in Honolulu, Hawaii, the Council directed staff to prepare a regulatory amendment to the Pelagic FEP regarding limits on the possession and landing of swordfish on a per-trip basis for those vessels holding an American

Samoa limited entry longline permit operating south of the Equator. Moreover, the Council took initial action and indicated its preliminary preferred alternative to be the upward modification or removal of the existing swordfish per trip limit for the American Samoa limited entry permit longline fishery. In addition to the preliminary preferred alternative, they considered an alternative that would increase the swordfish retention limit to 25 and include a provision for unlimited swordfish catch if the vessel was carrying an observer.

The action under Council consideration was further discussed at the American Samoa FEP Advisory Panel Meeting, March 1, 2018 (83 FR 5997), which was held in Tutuila, American Samoa. When the item was opened to discussion, all present agreed that the swordfish limit for American Samoa should be removed (WPFMC 2018a).

At its 128th meeting held on March 6-8, 2018 (83 FR 7162) in Honolulu, Hawaii, the Council's SSC further discussed and confirmed their recommendation that the swordfish retention limit be removed from the American Samoa limited entry permit longline fishery. The SSC concluded, "(T)he removal of the trip limit would not have adverse impacts to the swordfish stock and would eliminate unnecessary regulatory discards that currently reduce revenue for the longline fleet and reduce local swordfish supply." The SSC also noted that the limit removal would not lead to increased sea turtle interactions, as gear configurations and levels of fishing effort were very likely to remain the same.

At its 172nd Meeting held on March 14-16, 2018 (83 FR 7162), the Council took final action on this matter and identified the preferred alternative of swordfish retention limit removal for the American Samoa limited entry permit longline fishery. Council and SSC meeting minutes may be found on the Council's website at: <http://www.wpcouncil.org/meetings-2/meeting-archives/>.

2.2 Description of the Alternatives

2.2.1 Alternative 1: No Action (Status Quo/Current Management): Continue to allow up to 10 swordfish to be retained per trip

Under Alternative 1, no change would be made to current management measures and vessels longer than 40 ft. holding an American Samoa limited entry longline permit operating south of the Equator would continue to operate under the existing limit of 10 swordfish per trip.

Expected Fishery Outcomes

Under the no-action alternative, the management of the American Samoa longline fishery would continue under existing measures. In cases in which more than 10 swordfish/fishing trip are caught by a vessel longer than 40 ft., additional swordfish would need to be discarded (or an already-caught fish would need to be discarded if a newly caught swordfish is preferred by the fishermen, also called high-grading). Based on logbook data, about 97% of the longline vessel trips catch 10 or fewer swordfish.

The current retention limit results in unnecessary discards of swordfish and would continue under Alternative 1. Based on logbook and observer data, over a period of four years from 2013-2016, longline fishermen discarded approximately 21,500 lb of swordfish, which NMFS believes occurred in part because of the swordfish trip limit. At the 2018 market price of \$3.37, and assuming that none of these discards were due to other factors such as shark predation, damage

while being caught, small size, or other factors contributing to low marketability, or even taking up vessel hold space for more valuable catch, discards would have represented in a loss of potential revenue of over \$72,000 over the four years, or an annual fleetwide loss in revenue of just over \$18,100 and approximately \$1,393 per active vessel per year, based on the average number of Class C and D longline vessels that actively fished in 2017 and 2018.²

The discards are wasteful and inefficient. Swordfish stocks are healthy so discarding or releasing swordfish is not needed to ensure sustainable harvests of swordfish (see discussion, Section 3.2.1 below). The current requirement may also result in fishermen high-grading swordfish, such that when a larger swordfish is caught, they may discard the smaller dead swordfish in exchange for a larger fish.

2.2.2 Alternative 2: Modify Swordfish Retention Limit: Allow vessels to retain up to 25 swordfish per trip (unlimited if an observer is aboard)

In implementing the second alternative, the trip limit would be updated to allow vessels longer than 40 ft operating with a longline permit south of the Equator to retain up to 25 swordfish per trip if a NOAA observer is not on-board the vessel. If a NOAA-assigned observer is aboard the vessel, vessels could retain an unlimited number of swordfish. All other regulations would remain the same.

Expected Fishery Outcomes

Under Alternative 2, there would be no change to the number of swordfish hooked. However, the number of swordfish that could be landed would be increased to 25 or an unlimited number depending on the presence of an observer. This Alternative would result in increased efficiency and reduced waste due to unnecessary regulatory discards or associated with high-grading. Alternative 2 could increase revenues to the fishery by being able to sustainably harvest and sell more swordfish caught incidentally while longline fishing south of the Equator. In 2018, under the current 10 swordfish/trip limit, 150 swordfish were caught, 119 were kept and 31 discarded. This suggests that raising the limit to 25 swordfish/trip (unlimited with observer coverage) would likely result in nearly all the remaining swordfish being retained.³ However, the limit of 25 swordfish per trip could still result in some regulatory discards in cases in which swordfish catch exceeds 25 swordfish/trip (see Section 3.2.1). Other than retention of additional swordfish, based on analysis in this document (Section 4), we do not anticipate this alternative would result in a change to the way the fishery operates including location fished, gear used, and intensity of fishing.

2.2.3 Alternative 3: Remove Trip Limit: Allow vessels to retain an unlimited amount of swordfish (Council's Preferred Alternative)

Under this Alternative, the swordfish retention limit of ten would be removed such that there would be no restriction on the number of swordfish that could be possessed or landed per fishing trip by vessels longer than 40 ft. in the American Samoa longline fishery. Removing the swordfish retention limit would eliminate regulatory discards of swordfish by this fishery. No other existing

² No Class B vessels actively fished in recent years.

³ The 25 swordfish trip limit was chosen based on requirements in the Hawaii deep-set fishery. See Section 2.3.

regulations would be altered for the fishery. This alternative is consistent with National Standards 5, 7, and 8.

Expected Fishery Outcomes

Under Alternative 3, we do not expect a change to the amount of swordfish incidentally caught by the longline fishery, but as under Alternative 2, there would be a reduction in regulatory discards. Alternatives 2 and 3 would result in increased efficiency and reduced waste due to unnecessary regulatory discards or associated with high-grading. Under Alternative 3, there is the potential for fewer discards and increased revenue compared to Alternative 2. While it is possible for deep-set trips to land more than 25 swordfish/trip, it is not known how frequently this occurs. Total swordfish catch from 2008 to 2018 ranged between 132 and 318 individuals with a mean of roughly 238 swordfish caught per year. Approximately 73 (31%) swordfish are discarded annually on average, although only 21% were discarded in 2018. Pago Pago swordfish landings over this period ranged from 12,726 lb to 26,081 lb, with a mean of 18,058 lb. In 2018, 151 swordfish were caught, 120 were kept and 31 were discarded (Table 4). Other than increased swordfish retention, based on analysis in this document (Section 4), we do not anticipate this alternative would result in a change to the way the fishery operates including location fished, gear used, and intensity of fishing.

2.3 Alternatives Considered but Rejected from Further Analysis

As the purpose of this action is to increase efficiency in the American Samoa longline fishery by eliminating wasteful regulatory discards of swordfish and associated lost revenue, the Council considered other swordfish limit alternatives. In preliminary discussions, the Council considered increasing the trip limit to 32 swordfish, which was the upper bound of the observed trip swordfish catch. However, the Council decided to use 25 swordfish/trip for unobserved trips as an alternative retention limit (as under Alternative 2). This limit is the same as the swordfish retention limit in the Hawaii deep-set longline fishery with no observer onboard.

3 DESCRIPTIONS OF THE AFFECTED ENVIRONMENT

This section describes the affected fishery and fishery resources, other biological and physical resources, and potential effects implementing the alternatives would have on these resources. Climate change and environmental justice are considered, along with potential impacts to fishing communities, special marine areas and other resources, and fishery administration and enforcement.

3.1 Affected Physical Resources

The longline fishery based in American Samoa is a limited access fishery with a maximum of 60 vessels under the Federal permit program. Vessels range in size from under 40 to over 70 ft. long. The American Samoa longline fishery fishes at depths of greater than 100 m and operates in the pelagic ecosystem of the south Pacific Ocean. The fishery encompasses an approximate area between 180°- 125° W and 17°- 45° N, including the U.S. EEZ around American Samoa and high seas to the south of the Equator.

Federal regulations prohibit fishing within the Large Vessel Prohibited Area (LVPA) for vessels greater than 50 feet in length (generally within 50 nm of emergent lands) and commercial fishing

within marine national monuments. During the peak of longline landings in 2002, NMFS created the LVPA to prevent the potential for gear conflicts and catch competition between larger and smaller vessels, as well as to preserve opportunities for fishing by American Samoa’s small boat (“alia”) fleet (NOAA 2017). Since 2002, both large and small vessels have experienced declining catch rates, fish prices, and increasing fuel and operating costs. In 2016, NMFS published an exemption to the LVPA rule to allow large U.S. vessels holding a Federal American Samoa longline limited entry permit to fish in portions of the LVPA (seaward of 12 nm around Swains Island, Tutuila, and the Manua Islands). NMFS continued to prohibit fishing in the LVPA by large purse seine vessels. The fishing requirements for the Rose Atoll Marine National Monument also did not change (NOAA 2016). The American Samoa Government (ASG) then sued NMFS and the Council claiming that the 1900 and 1904 Deeds of Cession were not considered in the rulemaking process. On March 20, 2017, in *Territory of American Samoa v. NMFS, et al. (16-cv-95, D. Haw)*, a Federal district court judge vacated and set aside the January 2016 rule. The Court held that the action was inconsistent with the “other applicable law” provision of the Magnuson-Stevens Act by not considering the protection of cultural fishing in American Samoa under the Instruments of Cession. On September 25, 2020, the 9th Circuit Court of Appeals reversed the District Court ruling, and unanimously held that NMFS properly considered the impact of the 2016 rule on cultural fishing and fishing communities under our Magnuson-Stevens Act analysis, regardless of whether it specifically considered the Deeds Instruments of Cession as applicable law. This decision is not yet final.

Given the small size of the vessels and the offshore nature of the fishery, longline fishing is not known to affect air quality, noise, or water quality. The physical setting of the fisheries is further described in the Pelagic FEP (WPFMC 2009) and Pelagic SAFE Report (WPFMC 2019a).

3.2 Affected Biological Resources

3.2.1 Target and Non-Target Stocks

The fishery primarily targets albacore for landings at the local Pago Pago cannery, although the fishery also catches and retains other tunas and MUS for local sale and home consumption. The American Samoa longline fishery has the largest landings of MUS in American Samoa of all of the pelagic fisheries, which also include the American Samoa troll fishery (Table 2). Additional information is summarized in the Socio-economic Setting section of this document (Section 3.3). Fishery statistics can be found in the 2018 FEP annual SAFE reports on the Council’s website at: <http://www.wpcouncil.org/annual-reports/>.

Table 2. Estimated total landings (lb) of pelagic species harvested by longline, troll, and other gears in American Samoa in 2018.

Species	Longline Pounds	Troll Pounds	Other Pounds	Total Pounds
Skipjack tuna	147,758	8,141	0	156,172
Albacore	3,122,082	339	0	3,122,421
Yellowfin tuna	542,078	10,344	0	522,422

Kawakawa	0	266	0	266
Bigeye tuna	103,391	0	0	103,391
Bluefin tuna	1,428	0	0	1,428
Tunas (unknown)	0	0	0	0
Tuna MUS Total	3,916,737	19,363	0	3,936,100
Mahimahi	9,881	954	0	10,835
Black marlin	0	629	0	629
Blue marlin	69,721	1,107	0	70,827
Striped marlin	3,234	0	0	3,234
Wahoo	72,172	1,154	0	73,326
Swordfish	13,434	0	0	13,434
Sailfish	1,702	0	0	1,702
Spearfish	2,024	0	0	2,024
Moonfish	2,766	0	0	2,766
Oilfish	95	0	405	499
Pomfret	378	0	58	436
Thresher shark	1,163	0	0	1,163
Silky shark	715	0	0	715
Blue shark	6,972	0	0	6,972
Shortfin mako shark	723	0	0	723
Non-Tuna MUS Total	184,980	3,844	463	189,285
Barracudas	891	0	0	891
Great barracuda	0	193	88	280
Rainbow runner	0	173	50	223
Dogtooth tuna	0	464	649	1,113
Non-MUS Pelagics Total	891	830	787	2,507

Total Pelagics	4,102,608	24,037	1,250	4,127,892
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Source: WPFMC (2019a).

Table 3 shows the number of fish caught, kept, and released in the American Samoa longline fishery during 2018. In 2018, the longline fishery was the only fishery to catch swordfish. Overall, fishermen released 6% of the total longline-caught pelagic catch and discarded nearly all sharks and oilfish. Fishermen release fish for various reasons including quality, size, handling and storage difficulties, and marketing issues.

Table 3. American Samoa longline fishery pelagic species catch in 2018.

Species	Number Kept	Number Released	Total Caught	Percent Released
Skipjack tuna	10,516	153	10,669	1.4
Albacore	80,060	538	80,598	0.7
Yellowfin tuna	10,255	174	10,429	1.7
Bigeye tuna	2,262	45	2,307	2.0
Bluefin tuna	6	0	6	0.0
Tuna MUS Total	103,099	910	104,009	0.9
Mahimahi	459	8	467	1.7
Black marlin	0	2	2	100.0
Blue marlin	533	13	546	2.4
Striped marlin	47	4	51	7.8
Wahoo	2,767	34	2,801	1.2
Swordfish	119	31	150	20.7
Sailfish	24	44	68	64.7
Spearfish	44	83	127	65.4
Moonfish	56	14	70	20.0
Oilfish	5	1,619	1,624	99.7
Pomfret	43	257	300	85.7
Thresher shark	6	376	382	98.4
Shark (unknown pelagic)	0	64	64	100.0

Silky shark	11	433	444	97.5
Whitetip oceanic shark	0	525	525	100.0
Blue shark	83	3,024	3,107	97.3
Shortfin mako shark	8	195	203	96.1
Billfishes (unknown)	4	0	4	0.0
Non-Tuna MUS Total	4,209	6,726	10,935	61.5
Pelagic fishes (unknown)	0	9	9	100.0
Barracudas	73	5	78	6.4
Non-MUS Pelagics Total	73	14	87	16.1
Total Pelagics	107,381	7,650	115,031	6.7

Source: WPFMC 2019a. Note: 'Percent released' for a species is calculated from the number released divided by the total caught *100.

3.2.1.1 Catch and Stock Status of MUS

The Pelagic FEP (WPFMC 2009) includes status determination criteria (SDC) for overfishing and overfished determinations, and further describes the biology and life history of many MUS. Under the SDC set forth in the Pelagic FEP, overfishing is considered to be occurring when a stock's fishing mortality rate (F) for one or more years is greater than the maximum fishing mortality reference limit (MFMT), which is the fishing mortality rate that produces maximum sustainable yield (F_{MSY}). 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 reference limit (MSST), defined as the level that would prevent the stock from regularly producing the MSY in coming years (B_{MSY}). For such a stock, $MSST = cB_{MSY}$ where c is the difference of 1 minus the natural mortality rate (M) or 0.5, whichever is greater. Based on the accepted natural mortality rate of 0.35, MSST for Southwest Pacific swordfish is $0.65 \cdot B_{MSY}$. Expressed as a ratio, Southwest Pacific swordfish stock is considered overfished when the $B/B_{MSY} < 0.65$.

Albacore

The most recent stock assessment of South Pacific albacore was conducted by Tremblay-Boyer et al. (2018) using data up through 2016. Results indicate the stock is neither overfished nor subject to overfishing as median $F/F_{MSY} = 0.2$ or overfished. The stock assessment suggests that increases in fishing mortality will likely to lead to small increases in catch, but reduce size classes available to longline fisheries with associated impacts on vessel profitability. The 2018 stock assessment estimated average MSY at 104,663 metric tons (t). In 2018, the American Samoa longline fishery landed 1,416 t of albacore in American Samoa, representing less than 2% of the estimated MSY (WPFMC 2019a). Total estimated catch of albacore in the Pacific was 148,310 t in 2018, 117,696 t by longline fisheries (WPFMC 2019a).

Swordfish

Swordfish (*Xiphias gladius*) are found in tropical, subtropical, and temperate seas worldwide, ranging from around 50° N to 50° S (Bartoo and Coan 1989). Adults can tolerate a wide range of water temperature, anywhere from 5° to 27° C, but are most often found in areas with surface waters above 13° C (Nakamura 1985). The most recent stock assessment of Southwest Pacific swordfish was conducted by Takeuchi et al. (2017). The mean estimate of the MSY from the different model runs was 8,176 t. The median estimate of $F_{\text{recent}}/F_{\text{MSY}}$ was 0.86. The median ratio of SB_{latest} to SB_{MSY} was 1.61.⁴ The stock assessment indicated that Southwest Pacific swordfish is neither overfished nor subject to overfishing. Total estimated catch (t) of swordfish by the longline fisheries was 38,315 t in 2017 (WPFMC 2019a). Catches of swordfish in 2018 by the American Samoa longline fishery (13,434 lb; ~6.1 t) amounted to approximately 0.08% of the MSY).

Table 4 shows a summary of swordfish catch and associated fishery statistics from 2008 to 2018. The American Samoa longline fishery catches swordfish incidentally while fishing for albacore. The fishery is currently subject to per-trip retention limits of ten swordfish. This catch data comes predominantly from conventional monohull longline vessels, with three or fewer alia catamaran vessels operating over the course of the last decade.

Because the fishery complies with strict gear configuration requirements, it tends to catch mostly smaller swordfish that are found at or below 100m. The average number of swordfish caught per trip includes unmarketable fish that are either too small or damaged by sharks. Total swordfish catch from 2008 to 2018 ranged between 132 and 318 individuals with a mean of roughly 238 swordfish caught per year. Approximately 73 (30%) swordfish are discarded annually on average, though only 21% were discarded in 2018. Pago Pago swordfish landings over this period ranged from 12,726 lb to 26,081 lb, with a mean of 18,058 lb. The mean catch per trip was 1.29 swordfish, with a range of 0.62 to 2.85 individuals caught per trip (Table 4).

Based on data provided in logbooks and observer records, approximately 21,500 lb of swordfish may have been discarded due to the swordfish retention limit regulation in the four years from 2013 through 2016. Assuming that none of this swordfish would have been discarded due to depredation, etc., and that the amount landed and sold for \$3.37/lb⁵, this would represent approximately \$72,000 in lost revenue across the fleet within those four years, or just over \$18,100 per year for all vessels combined.

Table 4. Fishery statistics for swordfish harvested by American Samoa longline fishermen based on logbook data for 2008-2018.

Year	Catch (lb)	No. Caught	No. Kept	No. Discards	Mean Weight (lb) per Fish	No. Trips	Mean No. Caught per Trip
2008	12,726	215	117	98	108.77	287	0.75

⁴ WCPFC is yet to decide on a limit reference point for Southwest Pacific swordfish. Therefore, in this assessment, we report stock status in relation to both MSY-based and depletion-based reference points – $SB_{\text{recent}}/SB_F=0$, $SB_{\text{latest}}/SB_F=0$, $SB_{\text{recent}}/SB_{\text{MSY}}$, $SB_{\text{latest}}/SB_{\text{MSY}}$, and $F_{\text{recent}}/F_{\text{MSY}}$, where “recent” refers to the average of 2011-2014 and “latest” to 2015.

⁵ Swordfish price for 2018 from American Samoa commercial receipts. Source: Western Pacific Fisheries Information Network (WPacFIN) database accessed on January 16, 2020.

2009	23,270	289	205	84	113.51	175	1.65
2010	20,437	298	192	106	106.44	264	1.13
2011	24,477	318	213	105	114.92	274	1.16
2012	26,081	304	237	67	110.05	195	1.56
2013	20,474	296	186	110	110.08	104	2.85
2014	17,736	262	174	88	101.93	194	1.35
2015	14,615	186	139	47	105.14	202	0.92
2016	12,194	132	114	18	106.96	214	0.62
2017	13,191	166	122	44	108.13	135	1.23
2018	13,434	151	120	31	111.95	149	1.01
Mean	18,058	238	165	73	108.90	199	1.29

Source: NMFS PIFSC⁶ and WPFMC (2018b, 2019a).

Skipjack Tuna

The American Samoa longline fishery catches Western and Central Pacific Ocean skipjack tuna incidentally while fishing for albacore. The most recent assessment of skipjack tuna (*Katsuwonus pelamis*) in the western and central Pacific Ocean (WCPO) was conducted by McKechnie et al. 2016 using data through 2015. The assessment indicated that the WCPO skipjack tuna stock is neither overfished nor subject to overfishing. The assessment estimated the MSY for this stock at 1,875,600 t. The fishing mortality reference point $F_{\text{recent}}/F_{\text{MSY}}$ is 0.45. Skipjack stock is most probably at or close to the target reference point of $50\%SB_F=0$. The American Samoa longline fishery landed 147,758 lb (~67 t) of skipjack in 2018, less than 0.004% of the estimated MSY (WPFMC 2019a). Total estimated catch (t) of skipjack in the Pacific Ocean was 1,965,069 (WPFMC 2019a).

Yellowfin Tuna

The American Samoa longline fishery catches yellowfin tuna incidentally while fishing for albacore. The most recent stock assessment of yellowfin tuna (*Thunnus albacores*) in the WCPO was conducted by Tremblay-Boyer et al. (2017) using data through 2015. The assessment indicated that WCPO yellowfin is neither overfished nor subject to overfishing. Tremblay-Boyer et al. (2017) estimated the MSY for this stock to be 662,583 t. The median estimate of $F_{\text{recent}}/F_{\text{MSY}}$ is 0.75. The median $SB_{\text{latest}}/SB_F=0$ value was 0.33. The American Samoa longline fishery landed 542,078 lb (~245 t) of yellowfin tuna in 2018, less than 0.03% of the 2017 total Pacific Ocean yellowfin catch (926,968 t; WPFMC 2019a).

⁶ https://www.pifsc.noaa.gov/fmb/reports/american_samoa/longline_logbook_summary.php

Bigeye Tuna

Bigeye tuna (*Thunnus obesus*) is considered a Pacific-wide stock, but is assessed separately in the WCPO and EPO. The most recent stock assessment for WCPO bigeye tuna was completed in 2017, and analyzed bigeye tuna catch from Indonesia in the far western Pacific to 150° W in the central Pacific Ocean (McKechnie et al. 2017). The assessment indicated that WCPO bigeye is neither overfished nor subject to overfishing, and estimated the MSY for this stock at 153,444 t. In 2018, the American Samoa longline fishery landed 103,391 lb (~47 t) of bigeye tuna (WPFMC 2019a). These models estimate $SB_{\text{latest}}/SB_{F=0}$ to be between 0.08 and 0.17. It is of note that in 2016, nearly 1,000 t of bigeye was caught by American Samoan longline permits landing in Honolulu as well as Hawaii-based longline vessels operating under a specified fishing agreement with American Samoa (Williams and Terwasi 2017); the total Pacific Ocean catch of bigeye tuna catch in 2017 was 216,680 t (WPFMC 2019a).

3.2.2 Protected Species

The American Samoa longline fishery has the potential to interact with protected species, including sea turtles, marine mammals, a listed shark species, a listed manta ray, and seabirds. In accordance with the Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA), the fishery has undergone reviews to evaluate impacts and, if appropriate, to authorize a level of interaction that will ensure the fishery will not prevent the survival and continued recovery of listed species, or the conservation of other protected species.

NMFS funds fishery observer recruitment, training, and support in the Western Pacific Region including its observer program in American Samoa. Prior to beginning the mandatory observer program in American Samoa, NMFS conducted a pilot program from August through October 2002.

Beginning in April of 2006, some longline trips are subject to being observed by NMFS-provided fishery observers. Based on a random assignment scheme, Federal observers can be assigned to monitor protected interactions and collect other fishery data on American Samoa longline vessels (> 40 ft.). NMFS increased the annual observer coverage rate in 2010 and has since maintained a minimum of approximately 20% coverage rate (Table 5).

Table 5. Observer coverage in the American Samoa longline fishery from 2006 to 2018.

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of Sets Observed	287	410	379	306	798	1,257	662	585	565	504	424	447	276
Observer Coverage (% of fishing trips)	8.10	7.10	6.40	7.70	25.0	33.3	19.8	19.4	19.4	22.0	19.4	20.0	17.5

Source: NMFS PIRO Observer Program 2006-2018 Reports <https://www.fisheries.noaa.gov/pacific-islands/fisheries-observers/pacific-islands-longline-quarterly-and-annual-reports>

3.2.2.2 Species Protected under the Endangered Species Act (ESA)

Table 6 identifies the species listed as endangered or threatened under the ESA that have the potential to interact with the American Samoa longline fishery. This section also provides the number of interactions observed and estimated between protected species and the American Samoa longline fisheries.

Table 6. ESA-listed species with the potential to interact with American Samoa longline vessels

Species	ESA Status
Sea Turtles	
Central North Pacific green turtle distinct population segment (DPS) (<i>Chelonia mydas</i>)	Threatened
East Pacific green turtle DPS (<i>Chelonia mydas</i>)	Threatened
Central South Pacific green turtle DPS (<i>Chelonia mydas</i>)	Endangered
Central West Pacific green turtle DPS (<i>Chelonia mydas</i>)	Endangered
East Indian-West Pacific green turtle DPS (<i>Chelonia mydas</i>)	Threatened
Southwest Pacific green turtle DPS (<i>Chelonia mydas</i>)	Threatened
Hawksbill turtle (<i>Eretmochelys imbricata</i>)	Endangered
Leatherback turtle (<i>Dermochelys coriacea</i>)	Endangered
South Pacific loggerhead turtle DPS (<i>Caretta caretta</i>)	Endangered
Olive ridley turtle (<i>Lepidochelys olivacea</i>)	Threatened (except for Mexico's nesting population, which is Endangered)
Marine Mammals	
Blue whale (<i>Balaenoptera musculus</i>)	Endangered
Fin whale (<i>Balaenoptera physalus</i>)	Endangered
Sei whale (<i>Balaenoptera borealis</i>)	Endangered
Sperm whale (<i>Physeter macrocephalus</i>)	Endangered
Seabirds	
Newell's shearwater (<i>Puffinus auricularis newelli</i>)	Threatened
Sharks and Rays	
Oceanic whitetip shark	Threatened
Scalloped hammerhead shark, Indo-West Pacific DPS	Threatened
Giant manta ray	Threatened
Corals	
<i>Acropora globiceps</i>	Threatened
<i>Acropora jacquelineae</i>	Threatened
<i>Acropora retusa</i>	Threatened
<i>Acropora speciose</i>	Threatened

Species	ESA Status
<i>Euphyllia paradivisa</i>	Threatened
<i>Isopora crateriformis</i>	Threatened

Source: <https://www.fisheries.noaa.gov/species-directory/threatened-endangered>

3.2.2.3 Applicable ESA Consultations – American Samoa longline fishery

Table 7 below summarizes recent ESA consultations in the American Samoa longline fishery.

Table 7. History of ESA consultations in the American Samoa longline fishery.

Species Common Name	Consultation Date	Consultation Type	Outcome
Sea Turtles			
East Indian West Pacific Green Sea Turtle distinct population segment (DPS)	10/30/2015	BiOp	Likely to adversely affect (LAA), non-jeopardy
Central West Pacific Green Sea Turtle DPS	10/30/2015	BiOp	LAA, non-jeopardy
Southwest Pacific Green Sea Turtle DPS	10/30/2015	BiOp	LAA, non-jeopardy
Central South Pacific Green Sea Turtle DPS	10/30/2015	BiOp	LAA, non-jeopardy
East Pacific Green Sea Turtle DPS	10/30/2015	BiOp	LAA, non-jeopardy
Hawksbill Sea Turtle	10/30/2015	BiOp	LAA, non-jeopardy
Leatherback Sea Turtle	10/30/2015	BiOp	LAA, non-jeopardy
Olive Ridley Sea Turtle	10/30/2015	BiOp	LAA, non-jeopardy
Loggerhead, South Pacific DPS	10/30/2015	BiOp	LAA, non-jeopardy
Marine Mammals			
Humpback Whale	7/27/2010	LOC	Not likely to adversely affect (NLAA)
Sperm Whale	7/27/2010	LOC	NLAA
Blue Whale	5/12/2010	No Effects Memo	No Effect
Fin Whale	5/12/2010	No Effects Memo	No Effect
Sei Whale	5/12/2010	No Effects Memo	No Effect
Sharks			
Scalloped Hammerhead Shark, Indo-West Pacific DPS	10/30/2015	BiOp	LAA, non-jeopardy
Reef Building Corals			
<i>Acropora globiceps</i>	10/30/2015	BiOp	NLAA
<i>A. jacquelineae</i>	10/30/2015	BiOp	NLAA
<i>A. retusa</i>	10/30/2015	BiOp	NLAA
<i>A. speciose</i>	10/30/2015	BiOp	NLAA
<i>Euphyllia paradivisa</i>	10/30/2015	BiOp	NLAA
<i>Isopora crateriformis</i>	10/30/2015	BiOp	NLAA

In 2010, NMFS evaluated the potential impacts of the American Samoa longline fishery on ESA listed species on the implementation of Amendment 5 to the Pelagic FEP (WPFMC 2011), which established measures to reduce interactions between the fishery and green sea turtles. NMFS determined that the American Samoa longline fishery would have no effects on the blue, fin, or sei whale because no reports of these whales have been confirmed in the area, and was not likely to adversely affect the loggerhead sea turtle, and humpback and sperm whales (NMFS 2010a, 2010b). In a September 16, 2010, no-jeopardy biological opinion (NMFS 2010c), NMFS determined that the American Samoa fishery is likely to adversely affect green, hawksbill, leatherback, and olive ridley sea turtles, but not likely to jeopardize the continued existence or recovery of these species. The 2010 BiOp also anticipated and authorized a 3-year incidental take statement (ITS) for the green, hawksbill, leatherback, and olive ridley sea turtle (Table 8). The ITS was effective on September 23, 2011. Table 8 shows anticipated interactions, estimated mortalities, and the annual equivalent adult female mortalities (AFMs) for incidental take in the fishery in the NMFS 2010 BiOp.

Table 8. Total number of interactions (i.e., take) expected from the proposed action over a 3-year period as described in the 2010 BiOp for ESA listed species occurring in the action area.

Species Common Name	3-year		
	Interactions	Total Mortalities	Equivalent Adult Female Mortalities
Green Sea Turtle	45	41	10
Hawksbill Sea Turtle	1	1	1
Leatherback Sea Turtle	1	1	1
Olive Ridley Sea Turtle	1	1	1

The regulations implementing Amendment 5 to reduce interactions between the fishery and green sea turtles require American Samoa-based longline vessels to deploy all longline hooks to fish at least 100 m deep.⁷ Additional regulations included requirements for a minimum of 15 branch lines between each float, and a maximum of 10 swordfish retained on each trip. The Secretary of Commerce approved Amendment 5 and NMFS issued final regulations on August 24, 2011 that were effective on September 23, 2011 (76 FR 52888).

Since 2010, NMFS deployed observers on approximately 20% of all longline trips to monitor fishery interactions with sea turtles and marine mammals, among other duties.⁸ Interaction estimates for protected species are derived by expanding the observed interactions to a fleet-wide total. For example, 20% observer coverage results in an expansion factor of 5 ($100/20 = 5$). As a result, with a 20% coverage rate, one interaction with a green sea turtle would result in five total interactions ((Observed interactions) x (Expansion factor). $1(5) = 5$). Estimates using this methodology are then compared to the ITS in order to monitor the fisheries' impact of incidental take (NMFS 2010c).

⁷ All sea turtles, being air-breathers, are typically found closer to the surface (in the upper 100 m of the ocean's water column). However, some turtles, such as olive ridleys, may be more susceptible to deep-set longlining because of their deeper foraging behavior to 150 m depth. Therefore, sea turtles are vulnerable to longline fishing gear in the American Samoa longline fishery.

⁸ Observer coverage in American Samoa has ranged from 6.4% in 2008 to 33.3% in 2011, and in 2018 observer coverage was 17.5%. For a full summary of observer coverage refer to the Observer Program Pacific Islands Longline Quarterly and Annual Reports at <https://www.fisheries.noaa.gov/pacific-islands/fisheries-observers/pacific-islands-longline-quarterly-and-annual-reports>.

On October 30, 2015, NMFS reinitiated ESA Section 7 consultation on the American Samoa longline fishery in response to new information. From 2011–2014, the NMFS observer program reported five leatherback and five olive ridley turtles caught in the fishery, which exceeded the ITS of one leatherback turtle and one olive ridley turtle every three years as in the 2010 BiOp. Additionally, new ESA-listings also triggered the requirement to reinitiate consultation. On July 3, 2014, NMFS published a final rule (79 FR 38214) to list the Indo-West Pacific distinct population segment (DPS) of scalloped hammerhead shark as threatened under the ESA, and on September 10, 2014, NMFS also published a final rule (79 FR 53852) that listed 20 new species of reef-building corals as threatened under the ESA, six of which occur around American Samoa. The Council also recommended management changes to the fishery that could result in effects not previously analyzed in prior consultations, including modifications to the American Samoa limited access permit program, an exemption to certain portions of the LVPA, and changes in retention limits for swordfish, among other potential measures.

NMFS documented its determinations on the continued operation of the American Samoa longline fishery on five sea turtle species, Indo-West Pacific DPS of scalloped hammerhead shark, and six species of reef-building corals in a no-jeopardy biological opinion (2015 BiOp) (NMFS 2015a). NMFS concluded that the fishery is likely to adversely affect, but not likely to jeopardize green, hawksbill, leatherback, olive ridley, and the South Pacific DPS of loggerhead sea turtles and the Indo-West Pacific DPS of scalloped hammerhead shark, and not likely to adversely affect the six species of reef-building corals found in the action area. In the 2015 BiOp, NMFS also included a conference opinion for the green turtle DPSs, which became effective at the time of the final listing in 2016 (81 FR 20058, April 5, 2016). NMFS also anticipated and authorized a 3-year ITS for the green, hawksbill, leatherback, olive ridley, and South Pacific DPS of loggerhead sea turtle, as well as the Indo-West Pacific DPS of scalloped hammerhead shark (Table 9).

Table 9 shows three thresholds: interactions, total mortalities, and the annual equivalent AFMs for incidental take in the fishery in the 2015 BiOp. In 2015, NMFS deployed observers on 22% of all longline trips. As previously discussed, take estimates for protected species are derived by expanding the observed interactions to a fleet-wide total. These estimates are then compared to the ITS in order to monitor the fisheries' impact of incidental take (NMFS 2015a).

Table 9. Total number of interactions (i.e., take) expected from the proposed action over a 3-year period as described in the 2015 BiOp for ESA listed species occurring in the action area.

Species Common Name	3-year		
	Interactions	Total Mortalities	Equivalent AFMs
East Indian West Pacific Green Sea Turtle distinct population segment (DPS) ¹	1	1.08	0.006
Central West Pacific Green Sea Turtle DPS ¹	2	1.62	0.009
Southwest Pacific Green Sea Turtle DPS ¹	20	17.82	0.099
Central South Pacific Green Sea Turtle DPS ¹	30	27	0.15
East Pacific Green Sea Turtle DPS ¹	7	6.48	0.036
Hawksbill Sea Turtle	6	3	1.05
Leatherback Sea Turtle	69	49	1.65
Olive Ridley Sea Turtle	33	10	0.93
Loggerhead, South Pacific DPS	6	3	0.42

Scalloped Hammerhead Shark, Indo-West Pacific DPS ²	36	12	NA
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¹The green turtle DPS-specific ITSs became effective in May 2016 when the DPS listings finalized.

²An ITS is not required to provide protective coverage for the Indo-West Pacific scalloped hammerhead shark DPS because there are no take prohibitions under ESA section 4(d) for this DPS. Consistent with the decision in *Center for Biological Diversity v. Salazar*, 695 F.3d 893 (9th Cir. 2012), however, this ITS is included to serve as a check on the no-jeopardy conclusion by providing a reinitiation trigger so the action does not jeopardize the species if the level of take analyzed in the biological opinion is exceeded.

In 2018, the American Samoa longline fishery exceeded the ITS for four DPS of green (East Indian West Pacific, Southwest Pacific, Central South Pacific, and East Pacific), hawksbill, and olive ridley sea turtles. From July 2015 through 2018, the NMFS Observer Program reported 12 observed fishery interactions with green sea turtles, four in 2016, four in 2017, and four in 2018 (zero in 2015). These 12 interactions result in an expanded fleet-wide total of approximately 60 interactions (based on 20% observe coverage)⁹. The estimated total interactions for each of the DPSs are prorated based on the estimated proportions indicated in the 2015 BiOp. (Because NMFS cannot determine the DPS a green sea turtle belongs to at the time of an interaction, we must allocate a portion of each interaction to each of the five DPSs of green sea turtles whose pelagic distribution overlaps with the American Samoa fishery from genetic data collected from green sea turtles taken in the fishery¹⁰.) As a result of this proration, four of the five green DPS described in the 2015 BiOp, namely the East Indian West Pacific, Southwest Pacific, Central South Pacific, and East Pacific, have exceed the 3-year ITS authorized under the 2015 BiOp (Table 10.).

Table 10. Green sea turtle DPS that exceed the 3-year ITS authorized under the 2015 BiOp.

Green Turtle DPS	Percent Represented	ITS	Observed Interactions after Proration (amount over ITS)
East Indian West Pacific Green Sea Turtle distinct population segment (DPS)	2%	1	1.22 (-0.22)
Southwest Pacific Green Sea Turtle DPS	33%	20	20.13 (-0.13)
Central South Pacific Green Sea Turtle DPS	50%	30	30.5 (-0.5)
East Pacific Green Sea Turtle DPS	12%	7	7.32 (-0.32)

From July 2015 through 2018, NMFS observers reported three observed interactions with hawksbill sea turtles, one in 2016, and two in 2018 (zero in 2015 and 2017). Three interactions with hawksbills result in an expanded fleet-wide total of approximately 15 interactions.¹¹ As a result, 15 interactions have exceeded the 3-year ITS of six interactions authorized under the 2015 BiOp. NMFS observers have also reported eight interactions with olive ridley sea turtles, one in 2015, three in 2016, and two in both 2017 and 2018. Eight interactions with olive ridley sea turtles result in an expanded fleet-wide total of approximately 40 interactions.¹² As a result, 40 interactions have exceeded the 3-year ITS of 33 interactions authorized under the 2015 BiOp. The

⁹(Observed interactions) x (Expansion factor). 12(5.0) = 60

¹⁰The NMFS Southwest Fisheries Science Center conducted a direct count genetic analysis from green turtle samples collected by observers in the fishery. Portions of each interaction with a green sea turtle are allocated to a DPS by multiplying the genetic percentage of each DPS (taken from the direct count analysis), by the number of interactions ((Observed interactions) x (DPS Genetic Fraction)). For example 60(.50) = 30 interactions with the Central South Pacific DPS).

¹¹(Observed interactions) x (Expansion factor). 3(5.0) = 15

¹²(Observed interactions) x (Expansion factor). 8(5.0) = 40

American Samoa longline fishery has not exceeded the ITS for leatherback and there have been no observed interactions with the South Pacific DPS of loggerhead sea turtles.

As a result of exceeding the ITS for green, hawksbill, and olive ridley sea turtles, NMFS reinitiated ESA Section 7 consultation on the American Samoa longline fishery on April 3, 2019. In the request for reinitiation, NMFS found that the continued operation of the longline fleet is likely to adversely affect the East Indian West Pacific, Central West Pacific, Southwest Pacific, Central South Pacific, and East Pacific DPS of the green; hawksbill; western Pacific population of the leatherback; South Pacific loggerhead DPS; and eastern and western Pacific populations of olive ridley sea turtles. NMFS estimated the American Samoa fishery could interact with up to 47 green, eight hawksbill, 30 leatherback, two loggerhead, and 28 olive ridley sea turtles annually (NMFS 2019a).¹³ These predictions used observed interactions in the fishery from January 1, 2012 through December 31, 2017, as not all relevant catch records and other modeling variables were available through the end of 2018. For the hawksbill, South Pacific loggerhead DPS, and unidentified hardshell sea turtles, the predictions are based on observed interactions from 2012 through 2018, to account for two interactions with hawksbills in 2018 and zero data points for loggerhead and unidentified sea turtle interactions. Interaction data prior to 2012 were not included in the predictions, because green sea turtle mitigation measures, under which the fishery currently operates, were implemented in the fishery in September of 2011.

The NMFS Pacific Islands Fisheries Science Center (PIFSC) quantified the population-level effects of the anticipated level of sea turtle interactions in the American Samoa longline fishery as the number of adult females removed from the populations (ANE), where data are available, using the same methods as NMFS used for the Hawaii deep-set fishery (NMFS unpublished data). The resulting ANEs and proportion of nesting population are summarized in Table 11.

Table 11. Population level effect metrics for ESA-listed sea turtle populations over a 1-year period.

Species	Total Anticipated Annual Interactions	Annual Mortalities	ANE	Estimated Total Nesters	Proportion of Nesting Population	Years to adult female mortality
East Indian West Pacific green distinct population segment (DPS)	5.4	5	0.03	67,796	<0.000001	30.2
Central West Pacific green DPS	11.6	11	0.07	6,551	0.00001	15.1

¹³ Predicted interactions used the 95th percentile value. Percentile value indicates the approximate probability that the interactions would be equal to or less than the value. For example, for green sea turtles over 1-year, we would expect 95.3% of the interactions to be equal to or less than 47.

Species	Total Anticipated Annual Interactions	Annual Mortalities	ANE	Estimated Total Nesters	Proportion of Nesting Population	Years to adult female mortality
Southwest Pacific green DPS	21.9	21	0.12	82,810	<0.000001	8.2
Central South Pacific green DPS	34.3	32	0.19	3,118	<0.000006	5.2
Eastern Pacific green DPS	10.9	10	0.06	19,744	0.000003	16.4
Hawksbill sea turtle	8	8	0.10	1,500	0.000006	10.3
Western Pacific leatherback	30	21	0.86	1,388	0.00006	1.2
Eastern Pacific olive ridley	12	8	1.59	>1,000,000	0.000008	0.68
Western Pacific olive ridley	17	12	2.26	205,000	0.000002	0.44
South Pacific loggerhead DPS	2	2	2	1,300	0.0015	0.5

NMFS estimates that the fishery would cause mortality between less than 0.0001% (for the East India West Pacific and Southwest Pacific green DPS) to 0.15% (South Pacific loggerhead DPS) of the population every year, with population impacts for remaining sea turtle populations falling in between. For context, a change in the population of 0.1% represents a change in the population growth rate (r) equivalent to 0.001; $r = 0.03$ is a typical growth rate for an increasing population.

NMFS expects the fishery to cause a single adult female mortality ranging between every 0.44 (for western Pacific olive ridley) to every 30.2 years (for the East Indian West Pacific green DPS) for all sea turtle populations. The information indicates that for each sea turtle species, adult female mortalities associated with the estimated annual level of interactions do not substantially affect the population growth rate.

Under the 2015 BiOp, the overall population for each sea turtle species was expected to remain large enough to maintain genetic heterogeneity, broad demographic representation, and successful reproduction, and to retain the potential for recovery. This conclusion remains valid for the impacts of the American Samoa longline fleet on all species and DPS of sea turtles. NMFS expects the effects of the operation of the American Samoa longline fishery on all sea turtle species to be insubstantial.

In addition to exceeding the ITS for four DPS of green (East Indian West Pacific, Southwest Pacific, Central South Pacific, and East Pacific), hawksbill, and olive ridley sea turtles, NMFS also listed new species under the ESA that triggered Section 7 consultation. On January 22, 2018, NMFS listed the giant manta ray as threatened under the ESA (83 FR 2916). On January 30, 2018, NMFS listed the oceanic whitetip shark as threatened under the ESA (83 FR 4153). The American Samoa fishery interacts with both the giant manta ray and the oceanic whitetip shark, triggering the requirement for consultation. On September 28, 2018, NMFS issued a final rule to list the chambered nautilus as threatened under the ESA (83 FR 48976). There is currently no information to suggest that the American Samoa fishery has interacted with the chambered nautilus. NMFS has determined that protective regulations under 4(d) are not necessary or appropriate for the conservation of the giant manta ray, oceanic whitetip shark, or chambered nautilus at this time. Accordingly, incidental take is not prohibited under Section 9.

Based on exceeding the 3-year ITS as well as the listing of new species, on April 3, 2019, NMFS reinitiated formal consultation under Section 7 of the ESA for the following species:

- Green Sea Turtle, East Indian West Pacific DPS
- Green Sea Turtle, Central West Pacific DPS
- Green Sea Turtle, Southwest Pacific DPS
- Green Sea Turtle, Central South Pacific DPS
- Green Sea Turtle, East Pacific DPS
- Hawksbill Sea Turtle
- Leatherback Sea Turtle
- Olive Ridley Sea Turtle
- Loggerhead Sea Turtle, South Pacific DPS
- Scalloped Hammerhead Shark, Indo-West Pacific DPS
- Oceanic Whitetip Shark
- Giant Manta Ray

On April 3, 2019 and again on May 6, 2020, NMFS determined that the conduct of the fishery during the period of consultation will not violate ESA Sections 7(a)(2) and 7(d); that is, the operation of the fishery is not likely to jeopardize the continued existence of species listed as threatened or endangered, result in the destruction or adverse modification of designated critical habitat, nor will it result in an irreversible or irretrievable commitment of resources. Specifically, NMFS determined that there was no new information that would lead us to reconsider the core assumptions and conclusions reached in the 2015 BiOp for leatherback turtle, South Pacific loggerhead turtle, Indo-West Pacific scalloped hammerhead shark, humpback whale, sperm whale, and six reef building corals. As a result, NMFS found that the 2015 BiOp remains valid for these species during the period of reinitiated consultation.

3.2.2.4 Sea Turtles

All Pacific sea turtles are listed under the ESA as either threatened or endangered except for the flatback turtle (*Natator depressus*). This species is native to Australia and does not occur in the action area, and thus will not be addressed in this document. In addition to the BiOps listed in the previous section, more detailed information, including the range, abundance, status, and threats of the listed sea turtles, can be found in the status reviews, five-year reviews, and recovery plans for each species at NMFS website: <https://www.fisheries.noaa.gov/sea-turtles>.

In addition to protection under the Federal ESA, sea turtles in American Samoa are protected by the domestic fishing and hunting regulations for American Samoa which prohibit the import, export, sale, possession, transport, or trade of sea turtles or their parts and take (as defined by the ESA) and carry additional penalties for violations at the local government level. Sea turtle interactions in the American Samoa longline fishery are discussed in the previous section.

3.2.2.5 Marine Mammals

Marine mammals that occur in the Western Pacific Region and have been recorded as being sighted or probable in waters around American Samoa are shown in Table 12. Information on cetaceans around American Samoa is limited due to the lack of comprehensive surveys in the area (Johnston et al. 2008).

Table 12. Marine mammals occurring around American Samoa.

Common Name	Scientific Name
Blue Whale	<i>Balaenoptera musculus</i>
Blainville's Beaked Whale	<i>Mesoplodon densirostris</i>
Bryde's Whale	<i>Balaenoptera edeni</i>
Cuvier's Beaked Whale	<i>Ziphius cavirostris</i>
Dwarf Sperm Whale	<i>Kogia simus</i>
False Killer Whale	<i>Pseudorca crassidens</i>
Fin Whale	<i>Balaenoptera physalus</i>
Humpback Whale	<i>Megaptera novaeangliae</i>
Killer Whale	<i>Orcinus orca</i>
Melon-Headed Whale	<i>Peponocephala electra</i>
Minke Whale	<i>Balaenoptera acutorostrata</i>
Pygmy Killer Whale	<i>Feresa attenuata</i>
Pygmy Sperm Whale	<i>Kogia breviceps</i>
Sei Whale	<i>Balaenoptera borealis</i>
Short-Finned Pilot Whale	<i>Globicephala macrorhynchus</i>
Sperm Whale	<i>Physeter macrocephalus</i>
Bottlenose Dolphin	<i>Tursiops truncatus</i>
Common Dolphin	<i>Delphinus delphis</i>
Fraser's Dolphin	<i>Lagenodelphis hosei</i>
Pantropical Spotted Dolphin	<i>Stenella attenuata</i>

Common Name	Scientific Name
Risso's Dolphin	<i>Grampus griseus</i>
Rough-toothed Dolphin	<i>Steno bredanensis</i>
Spinner Dolphin	<i>Stenella longirostris</i>
Striped Dolphin	<i>Stenella coeruleoalba</i>

ESA-listed Marine Mammals

ESA-listed marine mammal species that have been observed or may occur in the area where the American Samoa longline fishery operates include the following species:

- Blue whale (*Balaenoptera musculus*)
- Fin whale (*Balaenoptera physalus*)
- Sei whale (*Balaenoptera borealis*)
- Sperm whale (*Physeter macrocephalus*)

Detailed information on these species' geographic range, abundance, bycatch estimates, and status can be found in the most recent stock assessment reports (SARs), available online at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments>.

To date, no sperm, blue, fin, or sei whale interactions have been observed or reported in the American Samoa longline fishery. The target rate for observer coverage has been above 20% of all trips since 2010 with the exception of 2018.¹⁴ NMFS determined in 2008 that the American Samoan longline fishery is not likely to affect blue whales (*Balaenoptera musculus*), fin whales (*Balaenoptera physalus*), or sei whales (*Balaenoptera borealis*). These three species have not been sighted in American Samoa and there have been no observed interactions in the American Samoa longline fishery (NMFS 2008).

Sperm whales (*Physeter macrocephalus*) are listed as endangered under the ESA and have been observed around American Samoa. The fishery has not had observed interactions with sperm whales since the inception of the observer program in 2006. On July 27, 2010, NMFS determined that the American Samoa longline fishery was not likely to adversely affect sperm whales.

On September 8, 2016 (81 FR 62260), NMFS published a final rule in the Federal Register to reclassify the humpback whale into 14 distinct population segments under the ESA, of which five DPSs are listed. The remaining nine DPSs were not listed, including the Hawaii DPS and the Oceania DPS, which occur in areas where the American Samoa longline fishery operates.

¹⁴ Observer coverage in 2018 was 17.5%.

Other Marine Mammals

Table 13 summarizes the fleet-wide non-ESA listed marine mammal interactions in the American Samoa longline fishery from 2007 to 2018.

Table 13. Annual marine mammal interactions expanded from observer data to fleet-wide estimates for the American Samoa longline fishery from 2007 to 2018.

Species	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Rough-toothed dolphin	0	16	0	0	15	0	5	0	0	10	5	6
Cuvier's beaked whale	0	0	0	0	3	0	0	0	0	0	0	0
False killer whale	0	31	0	0	9	0	5	0	9	10	5	6
Short-finned pilot whale	0	0	0	0	0	0	0	5	0	0	0	0
Unidentified cetacean	0	0	0	0	6	0	0	0	0	0	0	0

Source: WPFMC 2019a

Most cetaceans observed interacting with the fishery are released alive, although most of those interactions are classified as serious injury. Based on data from 2006 to 2008, the total estimated number of serious injuries and mortalities for marine mammals per year in the American Samoa longline fishery is 3.6 rough-toothed dolphins (CV = 0.6) and 7.8 false killer whales (CV = 1.7; Carretta et al. 2018).

Applicable MMPA Coordination – American Samoa longline fishery

The 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 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 assessments (16 U.S.C. § 1361, et seq.).

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 one of three categories based upon the level of serious injury and mortality of marine mammals that occurs incidental to each fishery. A Category I fishery is one with frequent incidental mortality and serious injury of marine mammals. A Category II fishery is one with occasional incidental mortality and serious injury of marine mammals. A Category III fishery is one with a remote likelihood or no known incidental mortality and serious injury of marine mammals. The American Samoa longline fishery is a Category II fishery in the 2020 List of Fisheries (85 FR 21079, April 16, 2020). Among other requirements, owners of vessels or gear engaging in a Category I or II fishery are required under the MMPA (16 U.S.C. 1387(c)(2)), as described in 50

CFR 229.4, to register with NMFS and obtain a marine mammal authorization to lawfully take non-endangered and non-threatened marine mammals incidental to commercial fishing operations.

3.2.2.6 Seabirds

Table 14 lists the seabird species that are considered residents or visitors in American Samoa. Of these, only the Newell's shearwater is listed as threatened under the ESA.

Table 14. Seabirds occurring in American Samoa.

Samoa name	English name	Scientific name
Residents (i.e., breeding)		
ta'i'o	Wedge-tailed shearwater	<i>Puffinus pacificus</i>
ta'i'o	Audubon's shearwater	<i>Puffinus lherminieri</i>
ta'i'o	Christmas shearwater	<i>Puffinus nativitatis</i>
ta'i'o	Tahiti petrel	<i>Pterodroma rostrata</i>
ta'i'o	Herald petrel	<i>Pterodroma heraldica</i>
ta'i'o	Collared petrel	<i>Pterodroma brevipes</i>
fua'o	Red-footed booby	<i>Sula</i>
fua'o	Brown booby	<i>Sula leucogaster</i>
fua'o	Masked booby	<i>Sula dactylatra</i>
tava'esina	White-tailed tropicbird	<i>Phaethon lepturus</i>
tava'e'ula	Red-tailed tropicbird	<i>Phaethon rubricauda</i>
Atafa	Great frigatebird	<i>Fregata minor</i>
Atafa	Lesser frigatebird	<i>Fregata ariel</i>
Gogouli	Sooty tern	<i>Onychoprion fuscatus</i>
Gogo	Brown noddy	<i>Anous stolidus</i>
Gogo	Black noddy	<i>Anous minutus</i>
Laia	Blue-gray noddy	<i>Procelsterna cerulea</i>
manu sina	Common fairy-tern (white tern)	<i>Gygis alba</i>
Visitors/vagrants/accidental visitors		
ta'i'o	Short-tailed shearwater	<i>Puffinus tenuirostris</i>
ta'i'o	Newell's shearwater (ESA threatened)	<i>Puffinus auricularis newelli</i>
ta'i'o	Mottled petrel	<i>Pterodroma inexpectata</i>
ta'i'o	Phoenix petrel	<i>Pterodroma alba</i>
ta'i'o	White-bellied storm petrel	<i>Fregetta grallaria</i>
ta'i'o	Polynesian storm petrel	<i>Nesofregetta fuliginosa</i>
n/a	Laughing gull	<i>Larus atricilla</i>
Gogosina	Black-naped tern	<i>Sterna sumatrana</i>

ESA-Listed Seabirds

The threatened Newell's shearwater has only been confirmed in American Samoa once (Grant et al. 1994) and is considered an accidental visitor to American Samoa. Since its inception in 2006, the NMFS American Samoa Observer Program has not documented any sightings of Newell's shearwaters or interactions between Newell's shearwaters and longline vessels or gear. In an informal consultation, dated May 19, 2011, USFWS concurred with NMFS' determination that the American Samoa longline fishery is not likely to adversely affect the Newell's shearwater.

In addition, three other seabirds in the South Pacific were determined to be endangered under the ESA in 2009: the Chatham petrel (*Pterodroma axillaris*), Fiji petrel (*Pseudobulweria macgillivrayi*), and the magenta petrel (*Pterodroma magentae*). However, the ranges of these three species are assumed not to overlap with that of the American Samoa longline fishery. In a communication from USFWS to NMFS on July 29, 2011, and recorded in a memorandum for the record on the same date, USFWS advised that, because of the lack of overlap between the range of the American Samoa longline fishery and the ranges of Chatham, Fiji, and magenta petrels, the fishery would not affect those petrels.

Non ESA-Listed Seabirds

All seabirds are protected under the Migratory Bird Treaty Act. Since its inception in 2006, the NMFS American Samoa Observer Program has recorded two interactions with unidentified shearwaters and one unidentified frigatebird in the American Samoa longline fishery from 2006 to 2017 (Table 15). All three interactions recorded from 2006 through present were released dead. Additionally, the observer program reported 13 observed interactions with black-footed albatross in 2015 that occurred in the North Pacific by a vessel departing American Samoa and landing in California.¹⁵

Table 15. Observed and estimated seabird interactions in the American Samoa longline fishery from 2006 to 2018.

Year	Unidentified Shearwater		Unidentified Frigatebird		Black-footed Albatross	
	Observed	Estimated Total Interactions	Observed	Estimated Total Interactions	Observed	Estimated Total Interactions
2006	0	0	0	0	0	0
2007	1	14	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0
2011	1	2	0	0	0	0

¹⁵ The Observer Program assigned an observer to this vessel because it was aware of its destination to California. As a result, the trip was not considered part of the population of American Samoa longline trips subject to random selection. As a result, the bycatch was added to the estimated total bycatch for the rest of the fleet; i.e., the American Samoa fleets BFAL bycatch estimate for 2015 was 13 BFAL (M. McCracken, pers. comm., 10/11/2019). This interaction event is considered anomalous as American Samoa longline vessels are unlikely to travel into the California EEZ.

2012	0	0	0	0	0	0
2013	0	0	1	5	0	0
2014	0	0	0	0	0	0
2015	0	0	0	0	13	13
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0

Source: NMFS American Samoa Longline Observer Program Annual Reports 2006–2018.

The species of shearwater observed interacting with the American Samoa longline fishery is unknown. However, three species of shearwaters (wedge-tailed shearwater, Audubon shearwater, and Christmas shearwater) and two species of frigatebirds (great frigatebird and lesser frigatebird) are considered residents in American Samoa. Abundance estimates are 5,200,000 individuals for wedge-tailed shearwaters and 30,000 to 59,000 individuals for Audubon’s shearwater (Waugh et al. 2009; BirdLife International 2019). Abundance estimates of Christmas shearwater and great and lesser frigatebirds are not available, but are considered to be species of least concern (BirdLife International 2019). Information on the distribution of shearwaters and frigatebirds around American Samoa are limited. Wedge-tailed shearwaters are recorded to have a foraging range of 480 km from breeding sites, and great frigatebirds are recorded to have a foraging range of up to approximately 600 km from breeding sites (Maxwell and Morgan 2013). Black-footed albatrosses number approximately 69,969 pairs and more than 95% nest on the Northwestern Hawaiian Islands (ACAP 2017; 2012). While the population is considered stable or increasing, the status of black-footed albatross is considered near threatened by IUCN (BirdLife International 2019.)

The American Samoa longline fishery’s observed interactions with two shearwaters is extremely low compared with its area population. The interaction with one frigate bird involves a species of least concern. And, the black-footed albatross interactions occurred outside the normal operating area of the American Samoa longline fishery.¹⁶

Scalloped Hammerhead Sharks

On July 3, 2014, NMFS listed four DPS of scalloped hammerhead shark under the ESA (79 FR 38213). The threatened Indo-West Pacific DPS is the only DPS that occurs in the action area and that may be affected by the American Samoa longline fishery. NMFS has not proposed critical habitat or protective regulations under ESA Section 4(d) at this time, but may consider them in future rulemaking. As described in the final rule listing (83 FR 4153), the scalloped hammerhead shark is not subject to the take prohibitions in Section 9 of the ESA because NMFS has determined that protective regulations under Section 4(d) are not deemed necessary and appropriate for the conservation of that species.

Abundance estimates for the Indo-West Pacific DPS of scalloped hammerhead shark are not available. There are some areas where there are depletions of local populations, such as off the coast of South Africa and Australia based on trends in abundance. Both of these areas are known to have high levels of illegal fishing that take sharks which is contributing to these decreasing trends.

¹⁶ Interactions occurred in the North Pacific by vessels departing American Samoa and landing in California, passing through areas where black-footed albatrosses feed.

There is no information on the population trend for the Indo-west Pacific DPS in the area where the American Samoa longline fishery operates; however, there is no evidence to suggest that there is a localized depletion in the area because there are no artisanal or international shark fisheries in the action area.

The American Samoa longline fishery has incidentally caught very low numbers of scalloped hammerhead sharks. From 2006 to 2018, observers recorded 15 scalloped hammerhead sharks, or an average of one observed shark take per year (Table 16). Of the 15 observed scalloped hammerhead sharks, 11 were released alive and four were released dead (NMFS observer program, unpublished data), resulting in an estimated mortality rate of 25%.

Table 16. Number of observed interactions with the Indo-West Pacific scalloped hammerhead DPS and total estimate using expansion factor from 2006 to 2018.

Year	Observed	Estimated Total Interactions
2006	1	13
2007	1	15
2008	0	0
2009	0	0
2010	4	17
2011	2	7
2012	0	0
2013	0	0
2014	1	6
2015	1	3
2016	1	5
2017	1	5
2018	3	17

Source: WPFMC (2019a).

NMFS predicted 12 scalloped hammerhead interactions annually in the American Samoa longline fishery. Based on a 33% mortality rate, NMFS estimates the response rate to be up to 3.96 (12*33%) annually (NMFS 2015a). In the 2015 BiOp, the effective population size of the Indo-West Pacific DPS was estimated to be 11,280-33,600 adults (NMFS 2015a). Applying a conservative population size of 11,280 adults, NMFS estimated four annual mortalities represent 0.04% ($4/11,280 \times 100 = 0.03546$) of the population. Due to the small level of take NMFS considered the risk to the scalloped hammerhead shark DPS from the American Samoa longline fishery to be negligible (NMFS 2015a). NMFS in its 2015 BiOp concluded that the American Samoa longline fishery as managed under the Pelagic FEP is not likely to jeopardize the continued existence or recovery of the Indo-West Pacific scalloped hammerhead DPS and authorized the fishery to interact with up to 36 Indo-Western Pacific scalloped hammerhead sharks, with up to 12 mortalities over a three year period (NMFS 2015a).

In the 2019 request for reinitiation of ESA Section 7 consultation for the American Samoa longline fishery, NMFS estimated that there could be up to 21 interactions with scalloped hammerhead sharks annually in the fishery. At a 77.8% post-release survival rate, we anticipate that 17 ($21 \times 0.778 = 16.3$, rounded to 17) of the 21 sharks would be released alive while four would be released dead (NMFS 2019a).

Based on a population estimate of 11,280 adults (NMFS 2015a), NMFS estimates four annual mortalities represents 0.04% ($4/11,280 \times 100 = 0.04$) of the population. Due to the small level of take, NMFS considers the fishery's effects on the Indo-West Pacific scalloped hammerhead shark DPS from the American Samoa longline fishing operations to be small. NMFS in its 2015 BiOp concluded that the American Samoa longline fishery as managed under the Pelagic FEP is not likely to jeopardize the continued existence or recovery of the Indo-West Pacific scalloped hammerhead DPS. There is no new information that would lead us to reconsider the conclusions reached in the no-jeopardy 2015 BiOp. Moreover, incidental take remains within levels estimated and authorized.

The Shark Finning Prohibition Act of 2000 (P.L. 106–557—December 21, 2000) prohibited shark finning and discarding shark carcasses at sea; and landing any fin without the corresponding carcass. In 2000 and the Shark Conservation Act of 2010 (P.L. 111–348—January 4, 2011) prohibited finning and discarding the carcass of a shark at sea and required all fishermen harvesting sharks to land the carcass intact, among other provisions. In November 2012, the Government of American Samoa banned shark fishing, including the sale possession, and distribution fins or other shark parts, within territorial waters (three nautical miles of the coastline).

Oceanic Whitetip Sharks

On January 30, 2018, NMFS issued a final rule to list the oceanic whitetip shark as a threatened species under the ESA (81 FR 1376). NMFS has not proposed critical habitat or protective regulations under ESA Section 4(d) at this time, but may consider them in future rulemaking. As described in the final rule listing (83 FR 4153), the oceanic whitetip shark is not subject to the take prohibitions in Section 9 of the ESA because NMFS has determined that protective regulations under Section 4(d) are not deemed necessary and appropriate for the conservation of that species.

The oceanic whitetip shark is distributed worldwide in epipelagic tropical and subtropical waters between 30° North latitude and 35° South latitude. The species is a highly migratory species that is usually found offshore and in deep waters. Additional detailed information on the oceanic whitetip sharks, including the range, abundance, status and threats to the species can be found in the 2018 Status Review Report (Young et al. 2018) and the 2016 Proposed Rule (81 FR 96304).

Currently, the population is overfished and overfishing is still occurring throughout much of the species range. Oceanic whitetip biomass has declined by 86% since 1995 (Rice and Harley 2012; Young et al. 2017). As a result, catch trends of oceanic whitetip shark in both longline and purse seine fisheries have significantly declined, with declining trends also detected in some biological indicators, such as biomass and size indices.

In addition to bycatch related mortality, the oceanic whitetip shark is a preferred species for retention because its large fins obtain a high price in the Asian fin market, and comprises approximately 2% of the global fin trade (Clarke et al. 2006). This high value and demand for oceanic whitetip fins incentivizes the retention and subsequent finning of oceanic whitetip sharks

when caught, and thus represents the main driver of mortality of this species in commercial fisheries throughout its global range.

To mitigate impacts to the oceanic whitetip shark, conservation measures recommended by regional fishery management organizations and implemented by regulations in the U.S. domestic fisheries have prohibited retention of oceanic whitetip sharks since 2011 in the Inter-American Tropical Tuna Commission (IATTC) convention area and since 2015 in the WCPFC convention area. Specifically, these conservation measures for the WCPFC (50 CFR 300.226) prohibit U.S. fishing vessels from retaining any part or carcass of an oceanic whitetip shark, except to assist WCPFC observers in collection of samples. The regulations also require vessel operators to release any oceanic whitetip shark as soon as possible and take reasonable steps for safely releasing oceanic whitetip sharks. Similar conservation measures prohibiting retention and safe release of oceanic whitetip sharks are implemented in the IATTC convention area (50 CFR 300.24). Additionally, Federal regulations prohibiting shark finning were implemented between 1999 and 2002, resulting in most shark species caught in this fishery to be released alive since 2001.

Oceanic whitetip sharks account for 8.6% of the total overall interactions with sharks in the American Samoa longline fishery (1,269 oceanic whitetip sharks/14,814 total shark interactions x 100 = 8.6%). Table 17 describes all oceanic whitetip shark interactions in the fishery from 2010 to 2018.

Table 17. Observed and estimated annual takes using an expansion factor for the oceanic whitetip shark in the American Samoa longline fishery, 2010-2018.

Year	Observed	% Observer Coverage	Expansion Factor ¹	Estimated Interactions ²
2010	130	25%	4.0	520
2011	116	33%	3.0	348
2012	71	19.8%	5.1	363
2013	88	19.4%	5.2	458
2014	104	19.4%	5.2	541
2015	168	22.0%	4.5	756
2016	197	19.4%	5.2	1025
2017	63	20.0%	5.0	315
2018	108	17.5%	5.7	616

¹100/observer coverage. For example, for 2016, 100/19.4 = 5.2.

²(Observed interactions) x (Expansion factor). For example, for 2017, 63(5.0) = 315.

In July 2019, a team of international scientists completed a new stock assessment for the oceanic whitetip shark in the WCPO (Tremblay-Boyer et al. 2019); there is no stock assessment available for oceanic whitetip shark in the EPO. This was the first stock assessment since the WCPFC enacted CMM 2011-04, a no-retention measure for oceanic whitetip sharks for WCPFC Members, Cooperating Non-Members and Participating Territories. The 2019 assessment provided updated biological information that required NMFS to re-evaluate the effects of the fishery on this species. In summary, the 2019 assessment found that fishing mortality reference points improved by nearly half in the period since CMM 2011-04 became active, which covers the last four years of the assessment's time-span (2013-2016), and a slight increase in spawning biomass since 2013. The assessment also indicates that the WCPO population continues to decline due to overfishing, and that current catch in the WCPO (all fisheries and gear types combined) are estimated at about 3,000 t annually. Because the 2019 assessment assumes that oceanic whitetip sharks mature

between four and eight years, the assessment results indicate that overall stock recovery is expected to be slow in the period following the conservation measure while the spawning biomass rebuilds.

Final indicators of stock status and key management quantities contained in the 2019 assessment are determined from summary statistics over 648 model runs accounting for assumptions about life-history parameters and impact of fishing underpinning the assessment. Using the underlying data over the 648 models in the structural uncertainty grid described in Tremblay-Boyer et al. (2019), and provided to NMFS from the assessment authors, the median value of the current total number of individuals in the WCPO is 775,214.

Of the observed oceanic whitetip sharks incidentally caught in the American Samoa longline fishery from 2010-2018, an average of 66.6% were released alive. Based on a 66.6% at vessel survival rate, 740 of the 1,110 sharks that the fishery could potentially interact with in a given year would be released alive. NMFS estimates the anticipated level of interactions in any given year of equal to or less than 1,110 sharks represents no more than 370 mortalities or 0.048% ($370/775,214 \times 100$) of the estimated number of individuals in the WCPO.

In addition to the American Samoa longline fishery, the Hawaii shallow-set, deep-set also incidentally catch oceanic whitetip sharks. In the shallow-set, 875 oceanic whitetip sharks were caught between 2004 and 2018. Most oceanic whitetip sharks are released alive (88%) and the number of individual sharks retained by the HI SSL fishery appears to have declined in recent years. The 2019 Biological Opinion determined that the incidental take and resulting mortality of oceanic whitetip sharks associated with the direct and indirect effects of NMFS' continued authorization of the HI SSL fishery is not likely to reduce the viability of the oceanic whitetip shark (NMFS 2019b).

For the Hawaii deep-set fishery, the total number of observed sharks was 5,815 individuals between 2002 and 2017, with an expanded estimate of 26,967 sharks over this time period. Estimated one-year predicted interactions for the deep-set fishery are 3,185 or fewer interactions. The majority of oceanic whitetip sharks are now released alive in this fishery, and the number of individual sharks retained by the fishery has declined. Because the majority of deep-set fishing effort occurs in the WCPO, we conservatively apply the entire anticipated level of interactions to the number of estimated individuals in the WCPO stock. Therefore, 3,185 interactions at the 95% CI represents approximately 0.4% ($3,185/775,214 \times 100$), or less than one percent of the estimated number of individuals in the WCPO. This impact would likely be lower for the WCPO if population estimates could be calculated for the EPO stock. On October 4, 2018, and again on April 15, 2020, under the authority of ESA Sections 7(a)(2) and 7(d), NMFS concluded, in the respective memoranda that the conduct of the Hawaii deep-set longline fishery during the period of ESA consultation will not violate ESA Sections 7(a)(2) and 7(d).

PIFSC is conducting a study to assess the post-release survival rates of oceanic whitetip sharks released alive in the Hawaii deep-set and American Samoa longline fisheries. Hutchinson and Bigelow (2019) found that the condition of bycatch sharks at release ("good" versus "injured") and the amount trailing gear left on the animals were the two factors that had the largest effect on post release mortality. Animals released in good condition without trailing gear had the highest rates of survival. This study is ongoing.

NMFS requested reinitiation of ESA Section 7 consultation on the operation of the American Samoa longline fishery on April 3, 2019 (NMFS 2019a). In its request for reinitiation, NMFS estimated the fishery could interact with up to 1,110 oceanic white tip sharks based on a conservative 95% credible interval. As discussed above, NMFS estimates the anticipated level of interactions in any given year of equal to or less than 1,110 sharks represents no more than 370 mortalities or 0.048% ($370/775,214 \times 100$) of the estimated number of individuals in the WCPO. The impact of the American Samoa longline fishery on the oceanic whitetip shark population is likely to be minimal, considering the small contribution to the total WCPO catch (< 0.3%) and relative to the current biomass (< 0.1%) as well as the high proportion of the sharks released alive.

Giant Manta Ray

On January 22, 2018, NMFS issued a final rule to list the giant manta ray as a threatened species under the ESA (83 FR 2916). The giant manta ray is found worldwide in tropical, subtropical, and temperate bodies of water. The species is considered to be a migratory species, with estimated distances travelled of up to 1,500 km. NMFS did not identify critical habitat or protective regulations under ESA Section 4(d), but may consider them in future rulemaking.

Giant manta rays are caught incidentally in the American Samoa longline fishery. The average annual incidental catch of giant manta rays for 2011-2013 was 1,308 lb in the American Samoa longline fishery (NMFS 2016). Most giant manta rays incidentally caught in the American Samoa longline fishery are released alive, and there have been no observed interactions in the American Samoa longline fleet since 2014 (Table 18).

Table 18. Observed interactions and proportions of giant manta rays released alive in the American Samoa longline fishery (ASLL) from 2007 to 2018.

Year	ASLL	
	Observed Interactions	% Released Alive
2007	0	—
2008	0	—
2009	1	100%
2010	3	100%
2011	3	100%
2012	3	100%
2013	2	100%
2014	1	100%
2015	0	—
2016	0	—
2017	0	—
2018	0	—

Source: NMFS Pacific Islands Regional Observer Program, unpublished data.

Consultation for the giant manta ray was included in the ongoing consultation reinitiated on April 3, 2019 (NMFS 2019a). On April 3, 2019 and again on May 6, 2020, NMFS determined that the conduct of the fishery during the period of consultation will not violate ESA Sections 7(a)(2) and 7(d). In its request for reinitiation of ESA Section 7 consultation on the operation of the American Samoa longline fishery, NMFS estimated the fishery could interact with up to 38 giant manta rays annually, based on a conservative 95% credible interval. The observer interaction data also includes other mobulidae categories that may include giant manta rays. These categories are “unidentified ray” and “manta/mobula,” which NMFS prorates to provide an estimate of giant manta ray interactions. These predictions, generated by PIFSC using Bayesian data analysis methods appropriate for count data used observed interactions in the fishery from 2012-2017.

Based on an average post-release survival rate of 96.7%, NMFS expects up to one giant manta ray mortality annually ($38 \times 0.967 = 36.7$, rounded to 37 alive leaves one mortality). There is no historical or current global abundance estimate or stock assessment for giant manta rays. Most estimates of subpopulations are based on anecdotal diver or fisherman observations, which are subject to bias, and range from around 100-1,500 (Miller and Klimovich 2016). Little information is available on the abundance of giant manta rays in U.S. EEZ around American Samoa where the American Samoa longline fishery operates. Nevertheless, the 2016 NMFS Status Review Report for the giant manta ray concluded that the incidental catch of this species in U.S. longline fisheries is likely to have minimal effects on the population (Miller and Klimovich 2016). Based on this report, and the high likelihood that giant manta rays will be released alive in this fishery, NMFS does not expect that effects from the operation of the American Samoa longline fishery on the giant manta ray population would be substantial.

3.2.3 Reef-Building Corals

On September 10, 2014, NMFS issued a final rule to list 20 species of corals as threatened under the ESA (79 FR 53851). Fifteen of the newly listed species occur in the Indo-Pacific, and five in the Caribbean. Of those that occur in the Indo-Pacific, NMFS assumes only eight occur in waters under U.S. jurisdiction (79 FR 53851). The six species believed to occur in American Samoa are *Acropora globiceps*, *A. jacquelineae*, *A. retusa*, *A. speciosa*, *Euphyllia paradivisa*, and *Isopora crateriformis*. Species-specific information on the exact location of these ESA-listed coral is unavailable.

Coral reefs form on solid substrate but only within suitable environmental conditions that allow the deposition rates of corals and other reef calcifiers to exceed the rates of physical, chemical, and biological erosion. In the U.S. Pacific Islands, coral reef habitat occurs immediately within waters from 0-3 nm of shore, although some coral reef habitat can be found further offshore.

In contrast, pelagic fisheries generally operate dozens to a thousand miles offshore, far away from the islands and coral reef habitat areas, to target pelagic fish species in the water column. In American Samoa, Federal regulations prohibit all fishing vessels greater than 50 ft. in length, including longline vessels, from fishing generally within 50 nm of the shoreline. To access fishing grounds, pelagic fishing vessels have to transit areas where ESA-listed corals may occur. While pelagic troll vessels may deploy surface lures during transit, the activity does not occur in coral reef habitat. Pelagic longline vessels do not deploy gear in transit. Additionally, pelagic fishing activities do not involve anchoring and, therefore, the potential for anchor damage during fishing

activities is not an issue. In 2015, NMFS determined that the American Samoa longline fishery is not likely to affect ESA-listed species of shallow reef-building corals (NMFS 2015b).

3.3 Pelagic Fisheries based in American Samoa

Pelagic fishing commercial ventures are diverse, ranging from small-scale vessels that have a very limited range, to moderate sized longline and troll vessels that fish primarily within EEZ waters, to large-scale purse seine vessels capable of catching tuna in the EEZ and distant high seas waters, and then delivering their catches to the two canneries (in operation before 2016) located in American Samoa. Currently the pelagic fisheries of American Samoa rely on supplying frozen albacore and small amounts of other pelagic fish (e.g., yellowfin, bigeye, and skipjack) directly to the remaining cannery (StarKist Samoa) in Pago Pago. Regulations require all owners and operators of American Samoa longline vessels to obtain a Federal permit and to submit logbooks containing detailed data on each of their sets and the resulting catch. Boat-based creel surveys, a Commercial Purchase System, and Cannery Sampling Forms are also used to collect fishery information for all fishing activity. Additional historical and recent data can be found in the Council's 2017 and 2018 Pelagic Fisheries Annual Reports (WPFMC 2018b; WPFMC 2019a).

3.3.1 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 range in size from under 40 to over 70 ft. long. Class A vessels are 40 ft. long or smaller, Class B vessels are longer than 40 ft. but no longer than 50 ft., Class C vessels are longer than 50 ft. but no longer than 70 ft., and Class D vessels are longer than 70 ft. As of May 15, 2020, 43 vessels held American Samoa longline limited entry Class B, C, and D permits. The fishery primarily targets albacore for landings at the local Pago Pago cannery, although the fishery also catches and retains other tunas (e.g., bigeye, yellowfin, and skipjack) and MUS (e.g., billfish, mahimahi, wahoo, oilfish, moonfish (opah), and sharks) for local sale and home consumption.

In 2000, the American Samoa longline fishery began to expand rapidly with the influx of large (≥ 50 ft.) conventional monohull vessels similar to the type used in the Hawaii-based longline fishery, including some vessels from Hawaii. These vessels are larger, have a greater range, and are able to set 30-40 miles of mainline and 1,500 to over 3,500 hooks per set. They have a greater fishing range and a greater capacity for storing fish compared to small-scale vessels which can store between 0.5 and 2 t. Large vessels are outfitted with hydraulically powered reels to set and haul mainline, and with modern electronic equipment for navigation, communications, and fish finding. All are presently being operated to freeze albacore onboard, rather than to land chilled fish.

The number of permitted and active longline vessels in this sector increased from three in 1997 to 31 in 2003. Over time, most of the small longline vessels became inactive, and in 2018, there was one small active (Class A) vessel, and 12 active Class C and D (large) vessels in the fishery (Table 19). These vessels fish predominantly in the U.S. EEZ around American Samoa. The majority of the active large longline vessels operating out of American Samoa are owned by indigenous American Samoans (Christina Lutu-Sanchez, President of the Tautai-O-Samoa Fishing Association, pers. comm., June 2017). Thirteen total vessels were active in 2018, down from 15 active in 2017 (WPFMC 2019a). Of the thirteen active vessels, Class C and D vessels are longer

than 40 ft. and therefore subject to the gear and swordfish retention requirements. No Class B vessels actively fished in recent years.

Table 19. Number of Class C and D permitted and active longline fishing vessels.

Year	Class C Permits	Class C Active	Class D Permits	Class D Active
2009	8	8	26	17
2010	12	7	26	18
2011	12	8	27	15
2012	11	8	27	14
2013	11	7	26	14
2014	17	7	27	14
2015	12	6	34	12
2016	12	5	27	13
2017	11	5	27	9
2018	14	4	29	8

Source: WPFMC 2018a, 2019a; WPFMC staff pers. comm.

Table 20. Logbook effort in the American Samoa longline fishery from 2008 to 2018.

Year	Average Hooks per Set	Number of Sets	Thousands of Hooks
2008	3,038	4,754	14,444
2009	3,070	4,910	15,076
2010	2,906	4,537	13,184
2011	2,846	3,891	11,074
2012	2,877	4,210	12,112
2013	2,985	3,411	10,184
2014	2,790	2,748	7,667
2015	2,802	2,786	7,806
2016	2,819	2,451	6,909
2017	2,816	2,419	6,818
2018	2,819	2,185	5,952
Mean	2,880	3,482	10,111

Source: WPFMC (2018b, 2019a).

Note: Data presented for 2008-2016 captures predominantly Class C and D vessels; only one Class A vessel was active, and zero Class B vessels were active.

Over time, the average hooks per set for longline vessels remains at around 2,880 (Table 20). The number of sets made in a year has decreased in the past several years from a high of 4,910 sets in 2009 to 2,185 in 2018. Similarly, the number of hooks set post-2008 was highest in 2009 at 15 million, with a low of 6.0 million hooks in 2018.

Table 21 summarizes catch statistics for the longline fishery. Fishing has occurred predominantly in EEZ waters surrounding American Samoa (excluding the existing LVPA and MPAs).

Table 21. American Samoa longline fishery statistics from 2008 to 2018.

Statistic	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Active Vessels	29	26	26	24	25	22	23	21	20	15	13
Hooks Set (millions)	14.4	15.0	13.2	11.1	12.1	10.2	7.7	7.8	6.9	6.6	6.0
No. Trips	287	175	264	274	195	104	194	202	214	135	149
Sets	4,754	4,910	4,537	3,891	4,210	3,411	2,748	2,786	2,451	2,333	2,185
Total Pelagics Landings (t)	4,372	5,114	5,117	3,582	4,414	2,790	2,338	2,554	2,177	2,210	1,871
Albacore Landings (t)	3,611	4,086	4,105	2,487	3,346	2,120	1,503	1,786	1,517	1,412	1,416
Yellowfin Tuna (t)	364	427	490	593	376	367	484	455	386	538	246
Bigeye Tuna (t)	135	211	210	175	185	87	96	83	72	65	47
Skipjack Tuna (t)	186	177	126	141	330	73	130	114	94	64	67
Wahoo (t)	111	126	109	88	75	68	56	55	47	50	33
Swordfish (t)	5.8	10.6	9.3	11.1	11.8	9.3	8.0	6.6	5.5	6.0	6.1
Total Ex-Vessel Value (adjusted millions of dollars)	11.8	13.1	12.7	9.6	10.5	6.5	5.3	5.9	4.9	4.7	4.3

Source: WPFMC (2018b, 2019a).

Approximately 4.1 million lb (1,871 t) of pelagic species are estimated to have been landed by American Samoa longline vessels during 2018 (Table 21), which is a reduction of 5.5 million lb from the 9.6 million lb landed in 2008. Landings of albacore species decreased substantially by 4.8 million lb from 2008 levels, while non-tuna (wahoo and swordfish) landings decreased by over 67% over the same period. Declines in catch are directly related to reductions in effort, leading to a declining trend in CPUE (WPFMC 2019a).

About 3.9 million lb (96%) of total landings in 2018 were tuna species, while the non-tuna (wahoo and swordfish) landings were roughly 78,200 lb. Albacore dominated tuna species landings with over 3.1 million pounds and comprised 76% of all pelagic species landings. Yellowfin (14%), bigeye (3%), skipjack (4%), and unknown tunas make up the rest of the tuna landings. Wahoo species dominated non-tuna MUS total landings, 1.7 % of all pelagic landings (WPFMC 2018b, WPFMC 2019a). Class D (>70 feet) longline vessels harvest the majority of the American Samoa total pelagic landings and commercial landings (WPFMC 2019a).

Catch-per-unit effort data for all American Samoa longline vessels is summarized in the CPUE for albacore, the main target species of the longline fishery, decreased to approximately from 17.4 fish per 1,000 hooks in 2010 to 13.5 fish per 1,000 hooks in 2018 (Table 22).

Table 22. CPUE (number of fish caught/1,000 hooks) by American Samoa longline vessels from 2010 to 2018.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018
Skipjack	2.4	2.5	4.3	1.1	2.5	2.0	2.0	1.5	1.8
Albacore	17.4	12.1	14.8	11.7	10.6	12.7	11.9	11.6	13.5
Yellowfin	1.8	2	1.2	1.9	2.5	2.6	2.6	3.7	1.8
Bigeye	0.8	0.7	0.6	0.4	0.7	0.6	0.5	0.4	0.4
Tuna MUS Total	22.4	17.3	20.9	15.1	16.3	17.9	17.0	17.2	17.5
Mahimahi	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1
Blue marlin	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Wahoo	1	0.9	0.7	0.7	0.7	0.7	0.7	0.7	0.5
Sharks	0.4	0.5	0.5	0.3	0.6	0.8	0.8	0.7	0.8
Swordfish	0.0226	0.0287	0.0251	0.0291	0.0350	0.0242	0.0194	0.0251	0.0254
Spearfish	0.1	0.1	0.1	0.1	0.1	0.1	0	0.0	0.0
Oilfish	0.6	0.6	0.8	0.7	0.6	0.8	0.6	0.3	0.3
Pomfret	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Non-Tuna MUS Total	2.6	2.4	2.5	2.2	2.4	2.7	2.4	2.1	1.9
Non-MUS Pelagic Total	0.3	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Pelagic Total	25.3	20.0	23.5	17.4	18.7	20.6	19.4	19.3	19.4

Source: WPFMC 2018b, 2019a

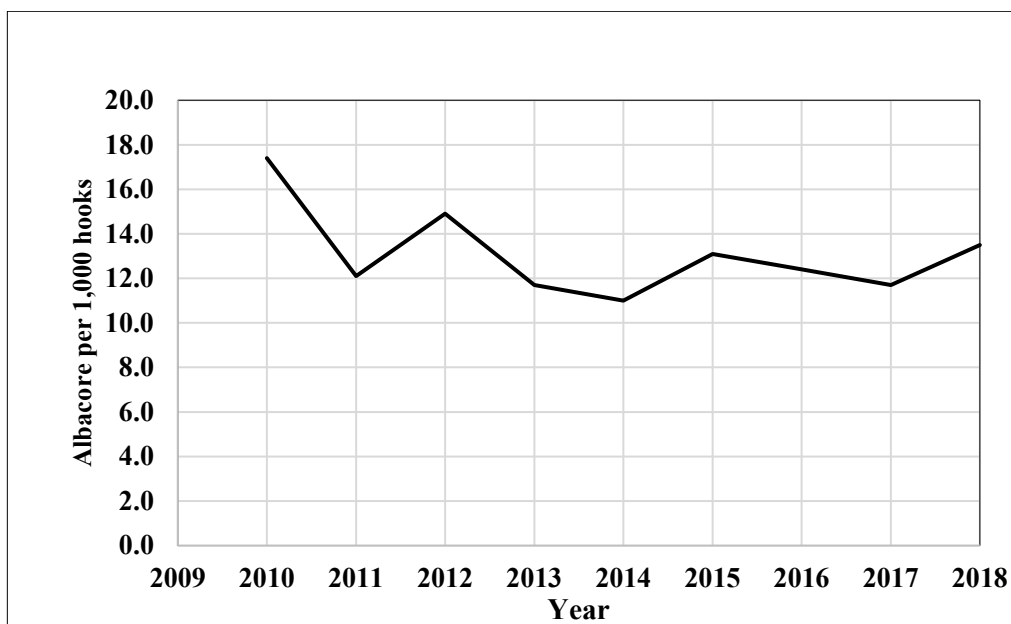


Figure 2. Albacore catch-per-unit-effort (number caught per 1,000 hooks) in the American Samoa longline fishery from 2010 to 2018.

Source: WPFMC 2019a.

Note: There were fewer than three alia vessels reporting in the years shown, so alia are not included in this figure.

Figure 2 depicts a summary of the trend of albacore catch-per-unit effort in the American Samoa longline fishery. The CPUE has been declining, but has shown some interannual variability.

3.3.2 Recreational Fishing

Levine and Allen (2009) provide an overview of fisheries in American Samoa, including subsistence and recreational fisheries. Citing a survey conducted in American Samoa by Kilarski et al. (2006), Levine and Allen noted that approximately half of the respondents stated that they fished for recreation, with 71% of these individuals fishing once a week or less. Fishermen also fished infrequently for cultural purposes, although cultural, subsistence, and recreational fishing categories were difficult to distinguish as one fishing outing could be motivated by all three reasons.

There is one large non-commercial fishing tournament held each year and hosted by the Pago Pago Game Fishing Association, with participants including anglers from off-island. Other small fishing tournaments are held throughout the year. Table 23 shows a summary of the species composition from fishery tournaments held between 2012 and 2018. Of the nearly 40,000 lb of fish landed in the tournaments in that period, just under half of the catch was comprised of yellowfin tuna while blue marlin, wahoo, mahimahi, and skipjack made up the majority of the remainder (cumulatively accounting for 88% of the catch). There are no records of swordfish catch by recreational vessels in American Samoa.

Table 23. American Samoa fishing tournament catch composition from 2012 to 2018.

Species	Cumulative Weight (lb)	Percent of Total
Yellowfin Tuna	16,033	40.04%
Blue Marlin	6,214	15.52%
Wahoo	7,350	18.35%
Mahimahi	3,993	9.97%
Skipjack Tuna	2,737	6.83%
Barracuda	1,254	3.13%
Dogtooth Tuna	892.8	2.23%
Sailfish	742	1.85%
Rainbow Runner	260.6	0.65%
Blue Marlin	295.2	0.74%
Bigeye	46	0.11%
Giant Trevally	88.4	0.22%
Trevally	91.6	0.23%
Mackerel	26	0.06%
Grey Shark	15	0.04%
Bullet Tuna	2	0.00%
Green Jobfish	6	0.01%
Total	40,046	100.00%

Source: D. Ochavillo American Samoa Dept. of Marine and Wildlife Resources, pers. comm., 10/16/2019.

The Pago Pago Game Fishing Association (PPGFA) was founded by a group of recreational anglers in 2003.¹⁷ The motivation to form the PPGFA was the desire to host regular fishing competitions. There are about 15 recreational fishing vessels ranging from 10-ft. long single engine dinghies to 35-ft. long twin diesel engine cabin cruisers. The PPGFA has annually hosted international tournaments in each of the past five years with fishermen from neighboring Samoa and Cook Islands attending. The recreational vessels use anchored fish aggregating devices extensively, and on tournaments venture to the various outer banks which include the South Bank (35 miles), North East Bank (40 miles NE), South East bank (37 miles SE), 2% bank (40 miles), and East Bank (24 miles East).

There is no full-time regular charter fishery in American Samoa similar to those in Hawaii or Guam. However, Pago Pago Marine Charters¹⁸, which is concerned primarily with industrial work such as underwater welding, construction, and salvage, also includes for-hire fishing among the services it offers. Pago Pago Charters goes out two to three times a week, many times to fish but

¹⁷ Source: <http://ppgfa.com/page/about-ppgfa>

¹⁸ <http://pagopagomarinecharters.com/>

other times to go whale watching. The target species are typical pelagic species including yellowfin tuna and mahimahi (W. Sword, PPGFA, pers. comm., October 31, 2012).

Estimation of the volume and value of recreational fishing in American Samoa is not known with any precision. An approximation of the volume of boat based recreational fishing is generated in the Council's Pelagics Annual Report, based on the annual sampling of catches conducted under the auspices of WPacFIN.¹⁹ Boat-based recreational catches have ranged from 558 to 1,208 lb between 2013 and 2016, comprising primarily pelagic fish (WPFMC 2018b, WPFMC 2019a). These catches are unsold, but based on the average price for troll caught pelagic fish (\$3.00/lb.; WPFMC 2019a) this would be worth between \$1,674 and \$3,624.

There is no information on any protected species interactions associated with recreational fishing. Recreational fishing boats are not subject to Federal permits, and thus are not required to submit logbooks that could document interactions with protected species or required to carry Federal fisheries observers. While the ESA applies to individuals, there is no recorded data of interactions with protected species from recreational vessels.

3.3.3 Cultural Fishing

Ethnographic research conducted within the last 30 years has recognized the ongoing social and cultural importance of fishing and seafood availability to American Samoan life. The importance of practicing cultural fishing is not unique to American Samoa. Other indigenous island communities throughout the Pacific have a high regard for fishermen and the important role they play in socio-cultural fabric of Pacific Island life. Women's fisheries have also been recognized as a key source of community food security. Fisheries sustained human habitation on Pacific Islands for several millennia, supporting the development of various island-based cultures. Thus, people generally link fishing to Pacific Island culture.

"Cultural fishing" is a relatively new term and is not yet readily defined.²⁰ It is widely held that cultures and societies change and evolve but also maintain central core values. As with other studies of culture, "cultural fishing" is context dependent – definitions from other areas may not be suitable for American Samoa. American Samoa culture is often framed in terms of Fa'a Samoa, or the "Samoan Way" which govern local social norms and practices. This includes core values and practices such as Tautua or "service" which involves the broad collective sharing of labor, resources, income, and social and political support to strengthen the Aiga (family groups), the village, and the role of chiefs in perpetuating Fa'a Samoa. In a fisheries context this may mean the distribution of catch within the Aiga, or the use of fish at specific ceremonial events. Cultural fishing would also encompass the day-to-day practices of subsistence. These values and practices endure in spite of significant technological change.

According to McGoodwin (2001), it is erroneous to assume conceptually distinguishable categories of fisheries such as "subsistence-oriented" versus "commercially-oriented" within small-scale fishing communities in developing countries, and where distinctions cannot be drawn, it is ill-advised to allocate fisheries resources that are predicated upon such distinctions.²¹ In such

¹⁹ <http://www.pifsc.noaa.gov/wpacfin/>

²⁰ Kleiber and Leong (2018) found zero references to the term within the academic literature.

²¹ McGoodwin, James. 2001. Understanding the Cultures of Fishing Communities. Food & Agriculture Organization of the United Nations. FAO Technical Paper 401:10-11. Rome, FAO. 287 p.

situations, the best management policy may be one that affords reasonable access to all community members, regardless of their motivations for fishing.²²

There is no one easy way to measure and hence define “culture” or “cultural fishing practices.” For example, there are several aspects to consider when considering American Samoa cultural fishing, including: 1) what motivations are associated cultural fishing; 2) who can participate in cultural fishing; 3) what methods, boats and gear types can be included in cultural fishing practices; 4) what species of fish are caught, when and where they are caught for cultural fishing; and 5) what are the rules and processes involved in the management of cultural fishing. Some of these aspects may matter more than others, and so each should be examined in light of how it contributes to the practice of Fa’a Samoa in the context of American Samoa.

Following the U.S. District Court ruling in favor of American Samoa that directed NMFS to preserve American Samoan cultural fishing practices as part of its obligations to the Deeds of Cession, the Council discussed cultural fishing practices at the 171st Council meeting held on October 17-19, 2017 in American Samoa (82 FR 46771). The Council solicited comments from the public on American Samoa cultural fishing during the course of its meeting and held an evening public hearing on the issue on October 17, 2017 at the Rex Lee Auditorium in Pago Pago. Public comments provided on the issue of cultural fishing acknowledged the wide range of fishing activities that can involve cultural fishing. Some general themes in relation to cultural fishing that were identified from the public hearing include: a) shared catch with the community in the form of Tautua in perpetuation of Fa’a Samoa, b) motivation for cultural fishing being linked to community service rather than profits, c) cultural fishing includes commercial fishing to pay for expenses associated with fishing, d) the offshore banks are important for alia vessels and other small vessels trolling and bottomfish fishing, e) fishing gear does not have to be limited to traditional methods and can include modern gear including longline fishing, and f) not just indigenous Samoans engage in cultural fishing.

DMWR Director Henry Sesepasara provided remarks to the Council regarding cultural fishing that included a description noting that cultural fishing involved traditional fishing techniques and the distribution of the catch to chiefs and extended families within the village. He recognized that modern gear and commercial fishing entered American Samoa fisheries in the 1970s, and acknowledged that indigenous fishermen sold 20% of the catch to recover funds for the next trip, but distributed around 80% of their catch to the village. He further stated that defining cultural fishing is not easy and there is a need to take into account earlier activities and new methods and gear now utilized and further that cultural fishing is not looking at a big profit, but for security for the community.

Also at its 171st meeting in October 2017 (82 FR 46771), the Council recommended that the PIFSC conduct research and interviews on cultural fishing in American Samoa. After conducting a thorough review of the existing relevant literature, PIFSC researchers visited American Samoa in February 2018 and conducted interviews with alia fishermen, longline fishermen, government officials, and other stakeholders. The researchers interviewed 10 alia fishermen, 3 longline boat owners, and 1 cannery worker in person. An American Samoan interpreter was used during the

²² Ibid.

interviews. The researchers asked these interviewees about the ways their fishing contributes to Fa'a Samoa, but did not ask the interviewees to define “cultural fishing.”



Figure 3. Conceptual model of American Samoa cultural fishing.

Source: Kleiber and Leong (2018).

Following their research, the PIFSC researchers developed Figure 3 and Table 24 to evaluate and synthesize the information received. Figure 3 is a conceptual model that provides a framework for discussing which elements of cultural fishing are associated with various types of fishing practices. This can be helpful in: a) evaluating potential impacts of proposed management actions, b) facilitating dialogue about cultural fishing, and c) documenting the rationale of decisions that have different impacts on diverse fishing practices. The categories are further detailed in Table 24.

Table 24. Factors of the cultural fishing model.

Factor	Sub-factors	Considerations could include:
Motivation	Commercial vs. Non-commercial	Proportion of non-commercial catch, as well as other non-commercial purposes such as ecological knowledge, or cultural practice.
Human Identity		The identity of the person involved in the fisheries including owner, captain, or crew.
Fishing Materials	Vessels	Materials used to make the vessels, where the vessels were made, and how long that vessel type has been in use in American Samoa.
	Gear	Materials used to make the gear, and how long that gear type has been in use in American Samoa.
	Infrastructure	Infrastructure or processing methods involved in the fishing value chain (both non-commercial and commercial).
	Capital Investment	Amount of capital investment needed for the fisheries.
Fishing Practice	Species	Cultural importance of certain species.

	Fishing Grounds	Cultural importance of certain fishing areas.
	Fishing Seasons	Cultural importance of fishing during certain seasons.
	Efficiency	Gear efficiency.
	Fishing Value Chain	Length of the value chain, and they type of value (cultural or commercial) being added to the catch at various stages.
Governance		The institutions and process of decision making.

Source: Kleiber and Leong (2018).

The researchers examined the interviewees' responses using the above conceptual framework. Overall, the researchers found that both the American Samoa alia and monohull longline fisheries primarily contribute to cultural needs through distribution of catch, but that perceptions of motivations for fishing affected the way that fishermen thought about each other's cultural contributions. The interviewees described similar relationships between culture and their fishing, including the following themes:

- Giving fish and helping others is core to Fa'a Samoa
- Fishing with modern boats and gear can still be cultural.
- They must sell fish to keep fishing for cultural purposes.

Fishing currently done in American Samoa is unlikely to fulfill all aspects of cultural fishing outlined by the conceptual model presented by Kleiber and Leong (2018). For example, many alia and longline fishermen are non-indigenous American Samoa residents. While these fishermen may not be considered "cultural" in the category of "human identity," many of them practice Fa'a Samoa and Tautua and so their motivations for fishing would align with cultural practices. Similarly, longline fishing by modern alia vessels involves aspects of cultural fishing. The alia longline fishery in American Samoa was a commercial endeavor that combined modernization (e.g., aluminum-hulled vessels powered with outboard engines; monofilament line, etc.) with customary fishing practices.²³ Alia longline fishermen sold most of their tuna catch, but they also shared some of the catch within the American Samoa community. This is also true for large longline vessels operating in American Samoa such that fishermen sell most of the catch, but retain some of the catch to provide to community members for food and cultural events.²⁴ Furthermore, most of the currently active large longline vessels operating out of American Samoa have ownership interests that include indigenous American Samoan as well as local residents.

3.4 Socio-economic Setting

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

²³ Koboski, T. 2014.

²⁴ Approximately 500 pounds per trip from American Samoa large longline vessels is shared with crew, community members and church groups. Christina-Sancheze Lutu, pers. comm., July 2017.

American Samoa is an unincorporated and unorganized territory of the United States located in the central South Pacific Ocean. It is the only inhabited U.S. territory in the Southern Hemisphere. The Council and NMFS, under the Magnuson-Stevens Act, formally designated American Samoa as a fishing community in 1999 (April 19, 2009; 64 FR 19067). However, local dependence on fishing goes back approximately 3,500 years to when the islands of the Samoan Archipelago were first inhabited (Sabater and Carroll 2009; Severance and Franco 1989).

While many aspects of their communities have changed in contemporary times, American Samoans have retained a traditional socio-cultural system that is strongly intertwined with fishing. Social values still influence when and why people fish, how they distribute their catch, and influence the meaning of fish within society. Fish and other resources often move through a complex and culturally-embedded exchange system that supports the food needs of kinsmen and recognizes the status of both the matai (chief) and minister and the continuity and strength of Fa'a Samoa. (Severance et al. 2013).

The 1899 Tripartite Convention divided the Samoan Archipelago between the U.S. and Germany, with the 77 square miles (199 square kilometers) of land on the islands of Tutuila, Aunuu, Ofu, Olosega, Tau, Swains, and Rose Atoll in the east falling under U.S. control. A year later, the U.S. government and local chiefs signed a Deed of Cession to formally declare American Samoa an official U.S. Territory. The U.S. and other powers especially prized the deep-water harbor at Pago Pago for its strategic and commercial value. Following World War I, the League of Nations granted New Zealand the responsibility for administering German or "Western" Samoa. In 1962, Western Samoa was granted independence and the country changed its name to Samoa in 1997 (it is also referred to as Independent Samoa). However, the demarcation between Samoa and American Samoa is largely geopolitical; many families are related and there is much cultural and commercial exchange between the two.

In 2017, the American Samoan population was listed at 55,641 people.²⁵ Approximately 90% of the population is comprised of indigenous Samoans who are descended from the aboriginal people who, prior to European contact, occupied the archipelago and exercised local sovereignty (AS DOC 2011). The small economy in American Samoa continues to develop. Its two most important sectors are the ASG, which receives income and capital subsidies from the U.S. Federal Government, and the tuna cannery, which produces canned tuna as the primary export (WPFMC 2019a).

Other private commerce/businesses comprise a smaller third sector. While the visitor industry is not well-developed in American Samoa, tourism is a promising developing sector (economywatch.com) and the Territory has been improving its visitor support infrastructure in recent years. Visitor arrivals are primarily from Samoa, and U.S. citizens, as well as cruises that arrive from the U.S., Europe, and Australia.²⁶

The excellent harbor at Pago Pago and certain special provisions of U.S. law form the basis of American Samoa's decades-old fish processing industry (WPFMC 2019a). The Territory is exempt from the Nicholson Act, which prohibits foreign ships from landing their catches in U.S. ports.

²⁵ <https://data.worldbank.org/country/american-samoa>.

²⁶ <http://www.euromonitor.com/travel-and-tourism-in-american-samoa/report>.

American Samoan products with less than 50% market value from foreign sources enter the United States duty free (Headnote 3(a) of the U.S. Tariff Schedule).

3.4.1 Tuna Canneries

Tuna processing in local canneries play a large role in the American Samoa economy through direct employment (largest private employer) and indirectly via delivery of goods or services in support of the processing facilities and employees. From 1995 to 2003, the value of canned tuna imported into the United States from American Samoa exceeded that of tuna imported from all other countries combined (Government Accountability Office 2014).

The American Samoa tuna canning industry faces significant competition from other countries. Lower employee wages and reductions in tariffs, have been reducing the competitive advantage of American Samoa's duty-free access to the U.S. canned tuna market. On October 5, 2010, Tri Marine International acquired the former Chicken of the Sea tuna cannery facility and formally reopened the cannery in 2015, trading under the name Samoa Tuna Packers (STP). However, in October 2016, STP stopped operations indefinitely, directly impacting 800 STP workers, but will continue to operate STP as a logistics hub for the Tri Marine Group.²⁷ The remaining cannery, StarKist Samoa, has now leased some of the STP facility to support its operations. In 2019, StarKist stated that it remains committed to processing operations in American Samoa.²⁸

According to the American Samoa's most recent statistical yearbook, the canning industry accounted for an estimated 14% of all the jobs in the territory, with StarKist being the single largest employer in the private sector by a large margin. The department also shows that StarKist made up an astounding 97% of American Samoa's principal domestic exports (American Samoa Department of Commerce Statistics Division 2017).

3.4.2 2009 Tsunami

On September 29, 2009, a magnitude 8.0 submarine earthquake south of the Samoan archipelago triggered a tsunami that made landfall in several Pacific island locations, including American Samoa and Samoa. Four tsunami waves 15 to 20 ft. (4 to 6 m) high arrived ashore on American Samoa about 15 minutes after the quake, killing 32 people.²⁹ In Pago Pago, near the capital, streets and fields filled with debris, mud, overturned cars and boats. Tsunami waves flattened several buildings in the village and damaged a primary power generation station. For a period following the disaster, shelters housed an estimated 2,200 people across the island.

In terms of fish harvesting equipment and fishery management resources, the waves damaged or destroyed all of the American Samoa Department of Marine and Wildlife Resources' floating docks and the first floor of the building. The tsunami also damaged Department equipment, such as vehicles and boats. All ramps in Pago Pago and shipyard dry-docking facilities sustained damage and major boat dock areas were unusable for a time because of the many vessels that were tossed about. A facility and associated equipment located in Pago Pago that was funded by the

²⁷ <http://www.staradvertiser.com/2016/10/13/business/business-breaking/tuna-cannery-in-american-samoa-to-halt-production/>

²⁸ <https://www.undercurrentnews.com/2019/04/29/starkists-still-committed-to-american-samoa-plant-despite-challenges/>

²⁹ <https://www.doi.gov/emergency/factsheets/american-samoa-earthquake-and-tsunami-damage>

Community Development Project Program for the Pago Pago Commercial Fishermen Association project was destroyed.

The Council and NMFS PIRO jointly examined the effects of the tsunami on the territory's fishing fleets. The tsunami destroyed or damaged many alia vessels predominately used in the bottomfish fishery, which were likely some of the same alia once used for longline fishing. The U.S. Secretary of Commerce determined a commercial fishery failure occurred for the commercial bottomfish fishery on January 26, 2012, clearing the way for Congress to appropriate \$1 million in relief funds. Funds have been spent on repairing alia vessels, providing funds to fishermen who lost their vessels in the tsunami, building a new boat ramp, and installing an ice machine near the DMWR facility.

3.4.3 Revenues

When the limited entry program was initially implemented (2005 to 2007), longline fishing effort increased. However, after peaking in 2007, fishing effort, landings and revenue have generally declined (Pan 2019). In 2018, the American Samoa longline fleet landed approximately 4.1 million pounds of pelagic species with an estimated total revenue of \$4.3 million (Table 21).

Previous cost-earning studies on the American Samoa fishery were conducted based on 2001 (O'Malley and Pooley 2002) and 2009 (Pan et al. 2017) operational years. O'Malley and Pooley (2002) found that the majority of vessels were profitable based on the 2001 operation, generating revenue sufficient to meet expenses and earned profit (approximately \$251,000 per vessel per year). However, 8 years later, the cost earnings study conducted by Pan et al. (2017) found that the economic performance of the 2009 fishing operation considerably decreased compared to 2001. Of the 23 vessels surveyed based on 2009 operation, only 52% (12 vessels) were able to make a net gain (earn a profit), while 48% of the vessels showed negative returns in fishery operations. On average, the vessel owners in 2009 generated a small margin of profit (approximately \$6,000 per vessel), which equates to only 2% of the profit level in 2001 (Pan 2019). In 2016, the economic net return was 10% of 2001. The improvement in net returns over 2009 mainly resulted from the decrease in fixed costs (Pan 2019).³⁰

3.4.4 Fishing Communities

In 1999, the Council identified American Samoa as a fishing community. The Secretary of Commerce approved this definition on April 19, 1999 (64 FR 19067). The Magnuson-Stevens Act defines a fishing community as "...a community that is substantially dependent upon or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew, and fish processors that are based in such communities" (16 U.S.C. § 1802(16)). NMFS has further specified fishing communities in the National Standard (NS) guidelines, defining the a fishing community as "...a social or economic group whose members reside in a specific location and share a common dependency on commercial, recreational, or subsistence fishing or on directly related fisheries dependent services and industries (for example, boatyards, ice suppliers, tackle shops)." National Standard 8 of the Magnuson-Stevens Act requires that conservation and management measures, consistent with the

³⁰ Overall in 2016, there was lower CPUE, lower fuel price, higher fish cost, and lower fixed costs than 2009 (Pan 2019).

conservation requirements of the act (including the prevention of overfishing and the rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities to provide for the sustained participation of such communities and to the extent practicable, minimize adverse economic effects to such communities.

3.5 Management Setting

The American Samoa longline fishery is managed by the Council and NMFS in accordance with provisions of the Pelagic FEP (WPFMC 2009). Fishery participants must comply with a suite of fishing regulations intended to ensure the fishery is sustainably managed, and that it operates in compliance with applicable laws including the ESA and MMPA. Requirements include permits, logbooks, vessel monitoring systems, accommodation of NOAA-assigned observers, gear restrictions, gear-deployment requirements, and requirements for reducing interactions and the severity of interactions with protected species. In addition, the fishery is also subject to conservation and management measures agreed to by the WCPFC and implemented by NMFS at 50 CFR 300. Swordfish is a highly migratory stock that is subject to management by WCPFC and the Inter-American Tropical Tuna Commission (IATTC). Current WCPFC measures for longline fishing for swordfish include the use of large circle hooks or whole finish bait (CMM 2008-03).

Enforcement of Federal fishery regulations is conducted by NOAA's OLE that also enforces provisions of the ESA and MMPA. The USCG also conducts, monitors, and enforces Magnuson-Stevens Act regulations along with a long list of other statutes applicable to fishing operations. Magnuson-Stevens Act-, ESA-, and MMPA-related enforcement cases are prosecuted by NOAA's Office of General Counsel.

3.5.1 U.S. Exclusive Economic Zone

The United States' EEZ around American Samoa consists of 118,438 square nautical miles (406,750 square kilometers), though they are truncated by the EEZs of other nearby island nations (Cook Islands, Tokelau, Samoa, Tonga, and Niue; Figure 4). Waters managed by the Council and NMFS in the U.S. EEZ here can generally extend anywhere from 3 nm to the full extent of the 200 nm EEZ.

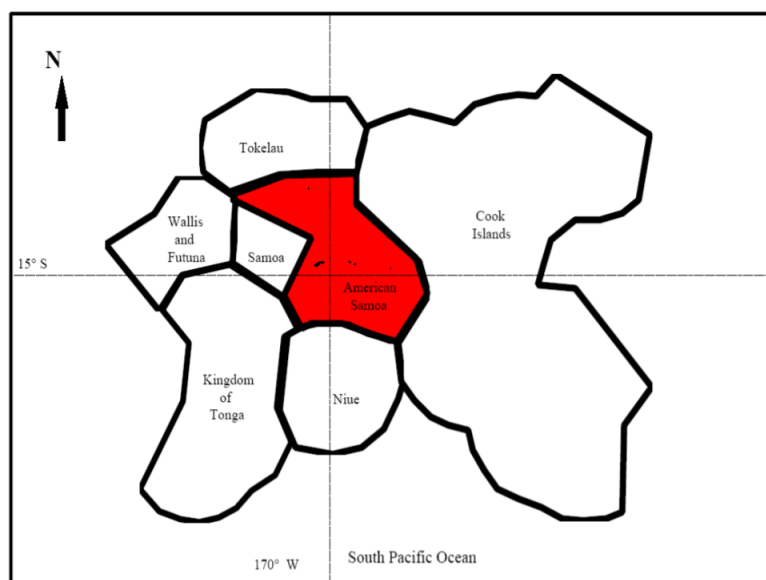


Figure 4. Map showing the U.S. EEZ boundaries around American Samoa as well as adjacent EEZ boundaries of neighboring countries.

The islands of American Samoa are in an area of modest oceanic productivity relative to areas to the north and northwest. To the south of American Samoa lie the subtropical frontal zones consisting of several convergent fronts located along latitudes 25°- 40° N and S often referred to as the Transition Zones. To the north of American Samoa, spanning latitudes 15° N –15° S, lies the equatorial current system consisting of alternating east and west zonal flows with adjacent fronts; the southern branch of the South Equatorial Current (SEC) flows westward from June to October and the South Equatorial Counter Current (SECC) flows eastward from November to April.

There are several offshore banks located within the US EEZ around American Samoa (Table 25; Figure 5). Some of these banks are relatively shallow, reaching to 40 m within the ocean surface (e.g. South Bank).

Table 25. Details on the American Samoa seamounts and banks

Bank	Extent (nm)	Depth (m)
South Bank	4.5	40
East Bank	20	200-500
Southeast Bank	Not available, comprises several small pinnacles	200
Northeast Bank	Flat topped guyot with top of 3 nm ²	100
Manua Bank	Not available, comprises several small pinnacles	100-600

Source: Ralston and Goolsby (1986).

Domokos et al. (2007) investigated the oceanography of the waters surrounding American Samoa and noted the impact of the SEC and SECC on the productivity of the longline fishery. They explained that the American Samoa fishing ground is a dynamic region with strong mesoscale eddy

activity and temporal variability with respect to albacore catches on time scales of less than one week. Seasonal and interannual variability in eddy activity, induced by baroclinic instability³¹ that is fueled by horizontal shear between the eastward-flowing SECC and the westward-flowing SEC, seems to play an important role in the performance of the longline fishery for albacore. The fishery experiences variable success from one year to the next, and generally has its best levels and rates of catch between May to July, although the fishing season can extend through to November. Catches of albacore have been observed to be highest when there are a high number of eddies detaching off of the SECC in the north before entering the waters of the EEZ.

Domokos et al. 2007 found that mesoscale eddy variability in the EEZ around American Samoa peaks from March to April, corresponding with when the kinetic energy of the eastward flowing SECC is at its strongest. Longline albacore catch tends to be highest at the eddy boundaries, while albacore CPUE shows higher levels of intra-annual variability. The fishery experiences high CPUE, which follows the periods of peak eddy activity by about two months. When CPUE is highest, catches are distributed toward the northern half of the EEZ, the region affected most by the SECC. Further indication of the possible importance of the SECC for longline fishing performance was the significant drop in eddy variability in 2004 when compared with that observed in 2003 – resulting from a weak SECC – which was accompanied by a substantial drop in albacore CPUE rates and a lack of improved CPUE toward in the northern portion of the EEZ around American Samoa.

³¹ Baroclinic instability is a fluid dynamical instability of fundamental importance in the atmosphere and in the oceans. In the atmosphere it is the dominant mechanism shaping the cyclones and anticyclones that dominate weather in mid-latitudes.

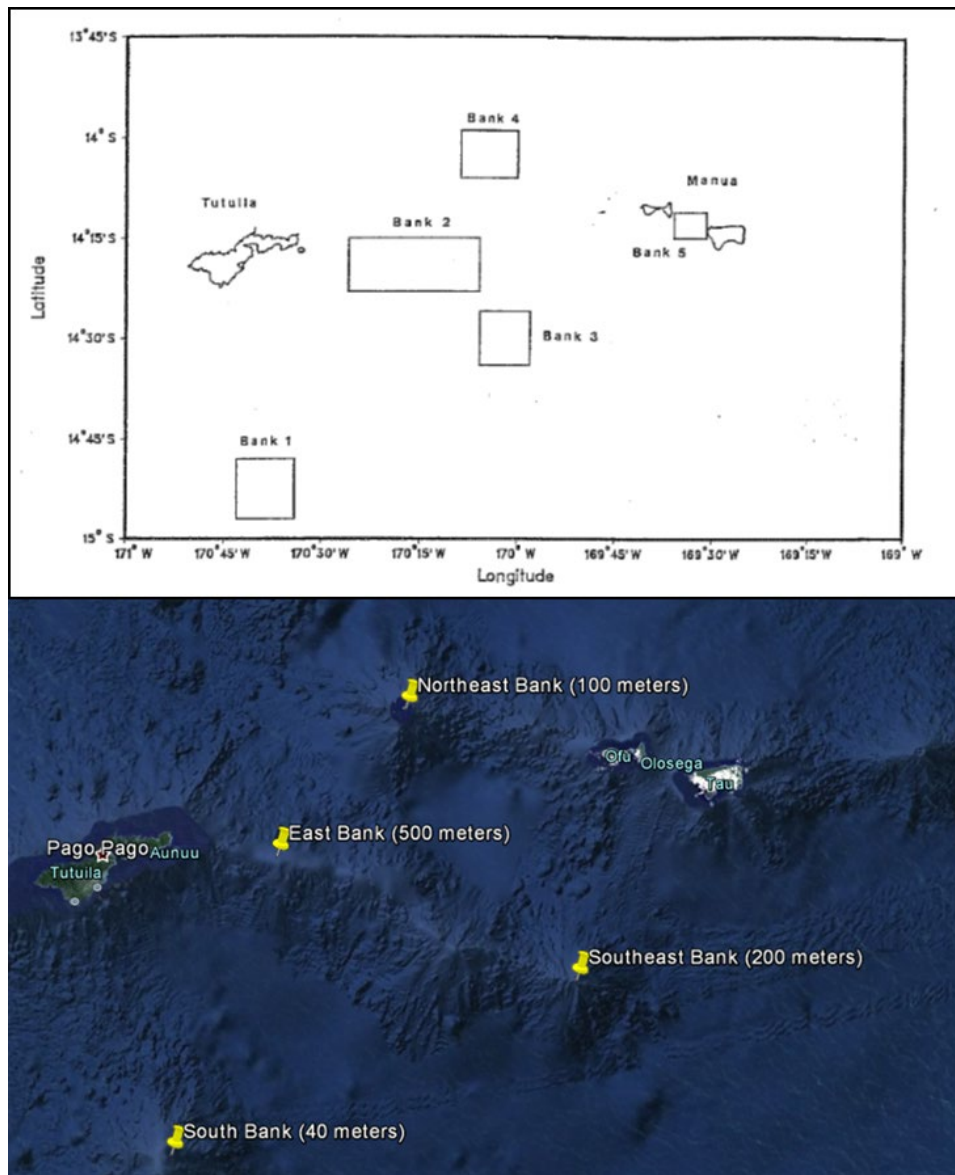


Figure 5. Locations of banks and seamounts around Tutuila and Manua Islands.

Notes:

(1) Top: Bank 1 = South Bank, Bank 2 = East Bank, Bank 3 = Southeast Bank, Bank 4 = Northeast Bank, Bank 5 = Manua Bank. Source: Ralston and Goolsby (1986).

(2) Bottom: Google Earth image showing bathymetry and general locations of shallow areas of the banks.

Fishermen tend to fish in areas where the edges of eddies are located. Informal communications indicate they believe that prey items are present in the greatest number in the upper 200 m of these eddy boundary areas. However, evidence to support higher micro-nekton biomass in the upper 200 m at eddy boundaries has been inconclusive thus far. According to Domokos et al. 2007, the vertical distribution of albacore seems to be governed by the presence of prey. Albacore spend most of their time between 150 and 250 m, away from the deep-daytime and shallow-nighttime sonic scattering layers. Using pop-off archival tags, researchers have found that albacore congregate at depths that coinciding with small local maxima in micro-nekton biomass whose backscattering properties are consistent with those of albacore's preferred prey. Settling depths of

longline sets during periods of decreased eddy activity correspond to those most occupied by albacore. It is possible that lower CPUEs are the result of longline bait being rendered less attractive to albacore in the presence of high levels of preferred prey.

In summary, Domokos et al. 2007 were able to explain variations in catch and CPUE by the American Samoa longline fleet. These patterns of high catch/ CPUE followed by lower catch/CPUE are fairly consistent across the time series of available data. The American Samoa longline fishery typically experiences peak harvest from May to July. Albacore catch and CPUE, however, notably drop during other parts of the year, and it becomes difficult for the fishery participants to cover their expenses during this “off-season”.

3.5.2 Marine Protected Areas

In addition to the LVPAs described in Section 3.1, there are two other marine protected areas around American Samoa: the Rose Atoll Marine National Monument and the American Samoa National Marine Sanctuary. Commercial fishing is prohibited within Monument waters. In the past, prior to the establishment of the LVPA areas and the Rose Atoll Marine National Monument, there were no reported incidents of gear loss or vessel groundings by U.S.-flagged vessels.

The National Marine Sanctuary of American Samoa is one of 14 federally designated underwater areas protected by NOAA’s Office of National Marine Sanctuaries (See Title 15 Code of Federal Regulations, Part 922, Subpart J (15 CFR 922)). The sanctuary is comprised of six protected areas, covering 13,581 square miles of nearshore coral reef and offshore open ocean waters across the Samoan Archipelago. NOAA originally established the sanctuary in 1986 to protect and preserve the 0.25 square miles of coral reef ecosystem within Fagatele Bay on Tutuila Island. In 2012, NOAA expanded the sanctuary to include Fagalu’a/Fogama’a (the next bay east of Fagatele), as well as areas at Aunu’u, Ta’u and Swains islands, and a marine protected area at Rose Atoll (known as Muliāva by the Manu’a residents) including nearby Vailulu’u Seamount.

3.5.3 Essential Fish Habitat and Habitat Areas of Particular Concern

The Magnuson-Stevens Act defines essential fish habitat (EFH) as those waters and substrate necessary for federally managed species to spawn, breed, feed, and/or grow to maturity. Federal agencies whose action may adversely affect EFH must consult with NMFS in order to conserve and enhance Federal fisheries habitat. Habitat areas of particular concern (HAPC) are subsets of EFH that merit special conservation attention because they meet at least one of the following four considerations:

- 1) Provide important ecological function;
- 2) Are sensitive to environmental degradation;
- 3) Include a habitat type that is/will be stressed by development; and
- 4) Include a habitat type that is rare.

HAPC are afforded the same regulatory protection as EFH and do not exclude activities from occurring in the area, such as fishing, diving, swimming or surfing.

An “adverse effect” to EFH is anything that reduces the quantity and/or quality of EFH. It may include a wide variety of impacts such as:

- 1) Direct impacts (e.g., contamination or physical disruption);

- 2) Indirect impacts (e.g., loss of prey, reduction in species' fecundity); or site-specific/habitat wide impacts, including individual, cumulative or synergistic consequences of actions.

In 1999, the Council developed and NMFS approved EFH definitions for management unit species (MUS) of the Bottomfish and Seamount Groundfish FMP (Amendment 6), Crustacean FMP (Amendment 10), Pelagic FMP (Amendment 8), and Precious Corals FMP (Amendment 4; 74 FR 19067, April 19, 1999). NMFS approved additional EFH definitions for coral reef ecosystem species in 2004 as part of the implementation of the Coral Reef Ecosystem FMP (69 FR 8336, February 24, 2004). NMFS also approved EFH definitions for deepwater shrimp through an amendment to the Crustaceans FMP in 2008 (73 FR 70603, November 21, 2008).

Ten years later, in 2009, the Council developed and NMFS approved five new archipelagic-based fishery ecosystem plans (FEP). The FEP 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. In addition to and as a subset of EFH, the Council described (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 2019, to prioritize conservation and management efforts and improve fishery management, NMFS reclassified many of the management unit species to ecosystem component species (ECS) under Amendment 4 to the FEP for American Samoa, Amendment 5 to the Marianas Archipelago FEP, and Amendment 5 to the Hawaii FEP. These amendments do not modify fishery operations; however, the ECS no longer have associated EFH designations. The effects of this change are minor as the total area designated as EFH only changed for the deep benthic substrates near Guam, CNMI, and American Samoa (84 FR 2767, February 8, 2019).

In considering the potential impacts of a proposed fishery management action on EFH, all designated EFH must be considered. Table 26 briefly summarizes the designated areas of EFH and HAPC for FEP MUS. Note that the target depth for the fishery's primary target, albacore, is approximately 100 to 300 m (WPFMC 2009).

Table 26. EFH and HAPC for Pelagic FEP MUS.

MUS	Species Complex	EFH	HAPC
Pelagic	Tunas, billfish, sharks, and other pelagic MUS	Egg/larval: The water column down to a depth of 200 m (100 fm) from the shoreline to the outer limit of the EEZ Juvenile/adult: The water column down to a depth of 1,000 m (500 fm)	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

3.5.4 Administration and Enforcement

NMFS conducts three administrative processes relevant to this action: in-season catch monitoring, enforcement, and publication of catch limits, specified fishing agreements, and closures.

The administrative burden for the government involves PIFSC monitoring catches by the American Samoa longline fishery, forecasting if/when any limits may be reached, and collecting and correcting catch data. PIFSC estimates this current administrative burden to be about half of a full-time employee salary per year and \$75,000 in administrative costs for the longline monitoring program (WPFMC 2014).

Regarding enforcement, all alternatives require PIFSC continue monitoring the fishery, and that NOAA OLE and USCG continue monitoring vessel compliance with applicable regulations and laws through vessel monitoring systems and vessel boarding at sea.

3.5.5 Western and Central Pacific Fisheries Commission

The WCPFC was established by the Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (WCPFC Convention), which entered into force on June 19, 2004. Members of the Commission include: Australia, China, Canada, Cook Islands, European Union, Federated States of Micronesia, Fiji, France, Japan, Kiribati, Korea, Republic of Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Chinese Taipei, Tonga, Tuvalu, United States of America, and Vanuatu. Participating Territories of the Commission include: American Samoa, Commonwealth of the Northern Mariana Islands, French Polynesia, Guam, New Caledonia, Tokelau, Wallis and Futuna. Cooperating non-members include: Belize, Indonesia, Senegal, Mexico, El Salvador, Ecuador, and Vietnam. The WCPFC area of competence is shown in Figure 6.

In 2005, the WCPFC agreed on a conservation and management measure for South Pacific albacore whereby Commission Members, Cooperating Non-Members, and participating Territories (CCMs) are to not increase the number of their fishing vessels actively fishing for South Pacific albacore in the Convention Area south of 20°S above current (2005) levels or recent historical (2000-2004) levels (CMM 2005-02). The conservation and management measure also includes a provision whereby the requirement to cap the level of fishing vessels described above shall not prejudice the legitimate rights and obligations under international law of small island developing State and Territory CCMs in the Convention Area for whom South Pacific albacore is an important component of the domestic tuna fishery in waters under their national jurisdiction, and who may wish to pursue a responsible level of development of their fisheries for South Pacific albacore.

WCPFC has also agreed on conservation and management measures for Southwest Pacific swordfish, bigeye and yellowfin, Southwest Pacific striped marlin, Bluefin, sea turtles, seabirds, and sharks. See <http://www.wcpfc.int/conservation-and-management-measures> for more information.

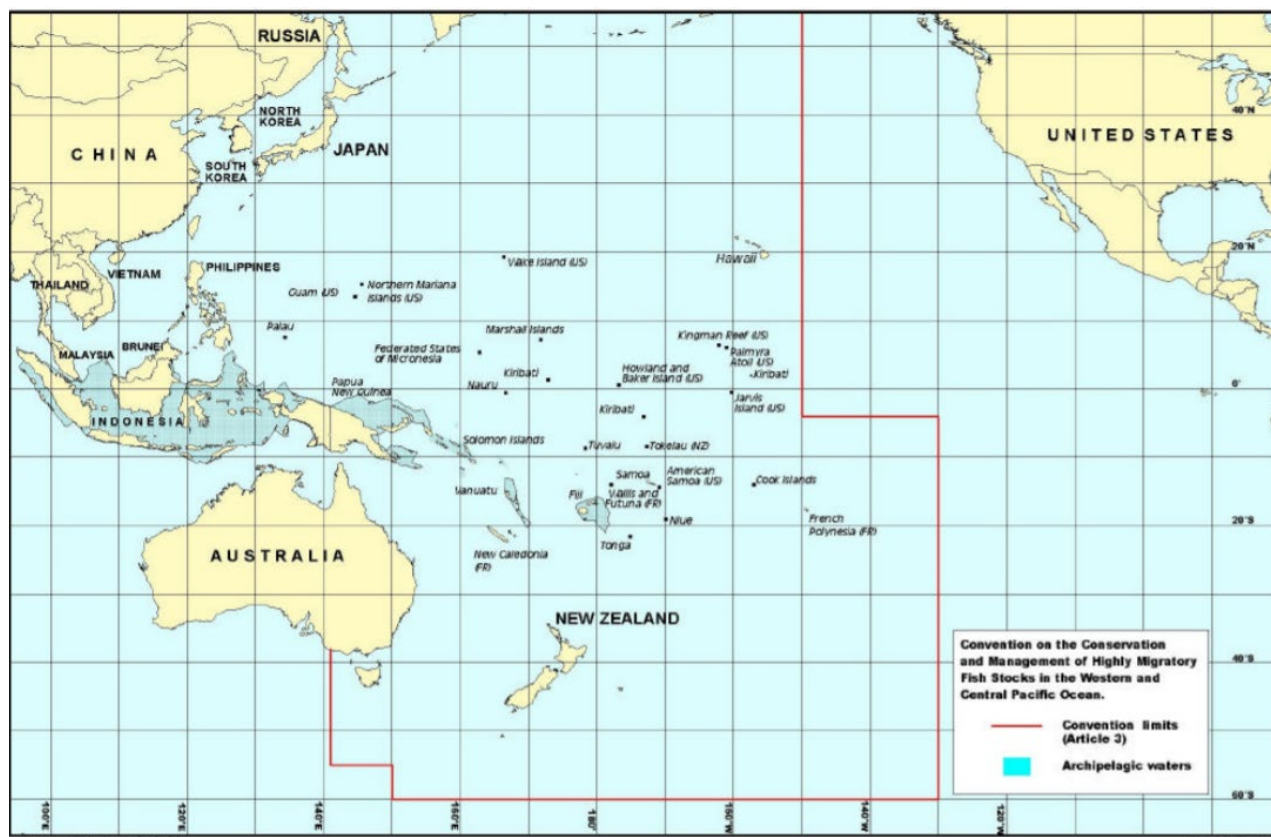


Figure 6. Map of the WCPFC Area of Competence.

4 ENVIRONMENTAL EFFECTS OF THE ALTERNATIVES

This section describes the potential consequences of each alternative on the components of the affected environment or other socio-economic elements identified in Section 3.3 above to evaluate the effects of the considered management alternatives. It also describes potential environmental consequences that could result from the alternatives under consideration. The analyses rely on the information provided in Section 3.3 as the baseline to evaluate the impacts of the alternatives under consideration. The environmental resources that are potentially affected include target and non-target species (including bycatch), protected resources, socioeconomic setting, and management setting. Climate change impacts are discussed alongside cumulative effects, among other similar factors (see Section 4.7).

Changes to pelagic fisheries in the U.S. participating territories may continue to persist going forward whether or not the proposed action is approved, and funding provided through specified fishing agreements will likely become available to support NMFS-approved fisheries development projects identified in a U.S. participating territory's marine conservation plan. However, it would be speculative at this time to attempt to evaluate environmental effects of potential projects without specific information on the type or scope of the funded projects. For this reason, potential effects of future fishery development projects are not analyzed in detail in this EA. Such projects are subject to separate environmental review when additional project details are known.

Moreover, due to the similarities in potential impacts for both Alternative 2 and Alternative 3, the following descriptions will often reiterate the consequences of one alternative alike the other depending on the resource category under consideration.

4.1 Potential Effects on Physical Setting

There are no anticipated changes to the physical environment for any of the alternatives. Pelagic longline gear by virtue of its fishing in the water column and not on the substrate means that the fishery does not have a large adverse effect on bottom habitats. Longline gear is not likely to come into contact with shallow seamounts or coral reef habitats. The American Samoa longline fishery is not known to have large negative effects on habitats and none of the alternatives are expected to change the way in which this fishery is conducted. None of the alternatives are expected to lead to physical, chemical, or biological alterations to ocean, coral or coastal habitats, including on open ocean waters and associated habitat features such as circulation, temperature, and salinity, due to modifying or removing the swordfish retention limit for the American Samoa longline fishery.

4.2 Potential Effects on Target, Non-Target, and Bycatch Stocks

4.2.1 Alternative 1: No Action/Status Quo: Continue to allow up to 10 swordfish to be retained per trip

Under Alternative 1 (i.e., the ‘No-Action Alternative’), the American Samoa longline fishery operating south of the Equator is expected to continue to operate within catch and effort ranges observed in recent years (see Table 22). The fishery is not expected to cause negative effects to the target and non-target stocks described in Section 3.2.1 under the status quo. However, the longline fishery will continue to experience regulatory discards of swordfish.

4.2.2 Alternative 2: Modify Swordfish Retention Limit: Allow vessels to retain up to 25 swordfish per trip (unlimited if an observer is aboard)

Alternative 2 would have no discernable impact on the stock status of target and non-target species caught by the American Samoa longline fishery. The principal target of the American Samoa fishery remains albacore, while swordfish are only incidentally caught in small numbers by the American Samoa fleet.

Incidental catches of swordfish will have negligible impact on the fishing mortality on the stock of Southwest Pacific swordfish. The total average catch between 2010 and 2016 of swordfish in the WCPO was 21,382 t, while the average catch over that period for American Samoa was about 10 t, or 0.08% of the average annual catch. A majority of the other pelagic species landed by the American Samoa limited entry longline fishery are not believed to be subject to overfishing or in an overfished condition (see Section 3.2.1). However, in rare cases in which the longline fishery catches more than 25 swordfish/trip, the fishery would still experience regulatory discards of swordfish.

The potential ability of the American Samoa longline fleet to retain all the swordfish caught will not lead to notable increases in swordfish catch, but will have some impact on the supply of swordfish to the local market in American Samoa. Due to gear modification prohibitions, logistic complexity and cost, longline vessels do not ship catch off island. As a result, there is little to no incentive for American Samoa longline fishery participants to modify their gear to set for

swordfish. In addition, swordfish catch rates indicate low abundance of the species within the normal fishing grounds of American Samoa longline vessels (U.S. EEZ around American Samoa). As a result, under Alternative 2, there are no changes anticipated in how the fishery operates in terms of gear types used, areas fished, level of catch or effort, and target and non-target stocks.

4.2.3 Alternative 3: Remove Trip Limit: Allow vessels to retain an unlimited amount of swordfish (Council's Preferred Alternative)

Alternative 3 would likely have no negative effects on target and non-target stocks harvested in the American Samoa limited entry permit longline fishery for reasons similar to those stated for Alternative 2 in Section 4.2.2 above. However, in comparison to Alternative 2, in cases where more than 25 swordfish were caught on unobserved trips, the fishery would no longer experience regulatory discards of South Pacific swordfish. As with Alternative 2, there are no changes anticipated in how the fishery operates in terms of gear types used, areas fished, level of catch or effort, and target and non-target stocks due to the limited market for swordfish in American Samoa.

4.3 Potential Effects on Protected Species

Protected species documented as occurring in the waters around American Samoa are described in Section 3.2.2. 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 Migratory Bird Treaty Act, and other applicable statutes.

Under Alternative 1, the American Samoa longline fishery interacts with green, hawksbill, leatherback, olive ridley, and loggerhead sea turtles; scalloped hammerhead and oceanic whitetip sharks; and the giant manta ray (see Section 3.2.2).

Under Alternatives 2 and 3, the ability to retain more swordfish than Alternative 1 is not anticipated to change fishermen's behavior or fishing operations that would lead to greater impacts to protected species as retention of swordfish occurs after the catch is retrieved. Due to gear modification prohibitions, logistic complexity and cost, longline vessels do not ship catch off island. As a result, there is little to no incentive for American Samoa longline fishery participants to modify their gear to set for swordfish. In addition, swordfish catch rates indicate low abundance of the species within the normal fishing grounds of American Samoa longline vessels (U.S. EEZ around American Samoa).

Under Alternative 1, interactions do occur with protected species and will likely continue to do so at current rates, but are within authorized limits pursuant to the ESA and MMPA (see Section 4.1). The fishing activities of the American Samoa longline fleet are not expected to change with respect to any of the alternatives and are not expected to result in additional interactions with protected species. As discussed in Section 3.2.2.3, on April 3, 2019 and again on May 6, 2020, NMFS determined that the conduct of the fishery during the period of consultation will not violate ESA Sections 7(a)(2) and 7(d). Specifically, NMFS determined that there was no new information that would lead us to reconsider the core assumptions and conclusions reached in the 2015 BiOp for leatherback turtle, South Pacific loggerhead turtle, Indo-West Pacific scalloped hammerhead shark, humpback whale, sperm whale, and six reef building corals. As a result, we found that the 2015 BiOp remains valid for these species during the period of reinitiated consultation. None of the

alternatives considered in this document would modify operations of the American Samoa fishery in any way that would be expected to affect protected, endangered or threatened species or critical habitat in any manner not considered in previous ESA consultations or MMPA determinations. The statuses of protected species in the action area would likely remain unchanged from baseline conditions described in Section 3.2.2, as fishery participants would still be subject to gear requirements under Federal regulations that promote deep-setting in the fishery, etc. Therefore, none of the alternatives would result in a significant impact to distribution, abundance, reproduction, or survival of protected species.

4.3.1.7 Sea turtles

Under the most recent BiOp (2015), NMFS concluded that the fishery is likely to adversely affect, but not likely to jeopardize green, hawksbill, leatherback, olive ridley, and the South Pacific DPS of loggerhead sea turtles and authorized a 3-year ITS for these species. Although the American Samoa longline limited entry program allows for up to 60 vessels, the number of vessels actively participating in the fishery in the last 12 years has ranged from a high of 29 vessels in 2007, to a low of 13 in 2018. In 2007, 29 vessels made 377 trips, 5,910 sets, and deployed approximately 17,524,000 hooks. In 2018, 13 vessels made 149 trips, 2,212 sets, and deployed 6,008,906 hooks (NMFS 2019c). Only twice in the last 12 years have there been an annual increase in effort, once in 2012 and a slight increase in 2015.

Between 2015 and 2018, the American Samoa longline fishery exceeded the 3-year ITS and on April 3, 2019, NMFS reinitiated ESA Section 7 consultation on the fishery. On April 3, 2019, and more recently on May 6, 2020, NMFS determined that the conduct of the fishery during the period of consultation will not violate ESA Sections (2) and 7(d); that is, the operation of the fishery is not likely to jeopardize the continued existence of species listed as threatened or endangered, result in the destruction or adverse modification of designated critical habitat, nor will it result in making irreversible or irretrievable commitments of resources. Since the last BiOp in 2015, fishing effort has gone down (Table 20), and is less than the level of effort analyzed in the 2015 BiOp, which determined the fishing effort would not jeopardize green, hawksbill, leatherback, olive ridley, and the South Pacific DPS of loggerhead sea turtles. Besides allowing for the retention of swordfish under Alternatives 2 and 3, none of the alternatives are expected to result in changes in how the fishery operates in terms of gear types used, areas fished, level of catch or effort, and target and non-target stocks. Therefore, impacts to sea turtles are not expected to change under all alternatives.

4.3.1.8 Oceanic Whitetip Shark

The American Samoa fishery interacts with both the giant manta ray and the oceanic whitetip shark (see Section 3.2.2), triggering the requirement for consultation, which NMFS initiated on April 3, 2019. Based on logbook summary reports from American Samoa, unstandardized (i.e., nominal) CPUE and catches of oceanic whitetip sharks have trended downward until about 2009, at which point the trend appears to have potentially stabilized (Young et al. 2018). It should be noted that these data are based on nominal catches recorded in fisheries logbooks and may not be reliable. While landings of sharks in general have declined in American Samoa, this trend is largely attributed to regulations pertaining to shark finning (e.g., the Shark Finning Prohibition Act).

Besides allowing for the retention of swordfish under Alternatives 2 and 3, none of the alternatives are expected to result in changes in how the fishery operates in terms of gear types used, areas

fished, level of catch or effort, and target and non-target stocks. Therefore, impacts to oceanic whitetip shark are not expected to change under all alternatives.

4.3.1.9 Giant Manta Ray

The 2016 NMFS Status Review Report for the giant manta ray concluded that the incidental catch of this species in U.S. longline fisheries are likely to have minimal impacts on the population. Besides allowing for the retention of swordfish under Alternatives 2 and 3, none of the alternatives are expected to result in changes in how the fishery operates in terms of gear types used, areas fished, level of catch or effort, and target and non-target stocks. Therefore, impacts to giant manta ray are not expected to change under all alternatives.

4.3.1.10 ESA-listed Corals

As summarized in Section 1.1, NMFS has previously determined that the American Samoa longline fishery may affect but is not likely to adversely affect six threatened reef-building corals listed in Table 6 (NMFS 2015b). In the action area, coral reef habitat is generally found in nearshore waters from 0-3 nm from the shore, although some coral reef habitat can be found further offshore. By contrast, the American Samoa fishery operates and targets pelagic fish species in the water column dozens to a thousand miles offshore, far away from the islands and coral reef habitat areas. To access preferred fishing grounds, pelagic fishing vessels could transit areas where ESA-listed reef corals may occur. However, fishing vessels actively avoid coral reef structures to avoid damage to their hulls, so transiting fishing vessels are not likely to cause damage to shallow tropical and subtropical reefs. Also, the fishery does not deploy gear in transit and does not typically fish in waters above coral reefs, nor do fishing activities involve anchoring, so there is no potential for anchor damage during fishing activities. Besides allowing for the retention of swordfish under Alternatives 2 and 3, none of the alternatives are expected to result in changes in how the fishery operates in terms of gear types used, areas fished, level of catch or effort, and target and non-target stocks. Thus, none of the alternatives would result in significant impact to ESA-listed corals.

4.3.1.11 Seabirds

Since 2006, the American Samoa longline fishery has had two observed interactions with unidentified shearwaters, one interaction with an unidentified frigatebird, and 13 observed interactions with black-footed albatross in 2015³² (Table 15). None of the alternatives are expected to result in changes in how the fishery operates in terms of gear types used, areas fished, level of catch or effort, target and non-target stocks, or protected species. Besides allowing for the retention of swordfish under Alternatives 2 and 3, none of the alternatives are expected to result in changes in how the fishery operates in terms of gear types used, areas fished, level of catch or effort, and target and non-target stocks. Thus, none of the alternatives would result in significant impact to seabirds.

4.3.1.12 Marine Mammals

The American Samoa longline fishery is a Category II fishery in the 2020 List of Fisheries (85 FR 21079, April 16, 2020). A Category II fishery is one with occasional incidental mortality and serious injury of marine mammals. None of the alternatives are expected to result in large changes to the conduct of the American Samoa longline fishery, including gear types used, areas fished, level of

³² Interactions occurred in the North Pacific by vessels departing American Samoa and landing in California, passing through areas where black-footed albatrosses feed.

catch or effort, target and non-target stocks, or protected species. Thus, none of the alternatives would be expected to result in changes to the fishery that would cause impacts to marine mammals not previously considered by the List of Fisheries classification.

4.4 Potential Effects on Socio-economic Setting

The Council has recommended NMFS modify the per-trip swordfish retention limit in the American Samoa longline fishery on the basis that the trip limit for the fishery may result in an inefficient use of fishery resources and may lead to wasteful regulatory discards. The fishery primarily targets albacore for landings at the local Pago Pago cannery, although the fishery also catches and retains other tunas and MUS for local sale and home consumption. Removing or modifying the swordfish limit is not expected to have any impact on the seafood processing industry in American Samoa, while having a likely positive impact on local sales and home and cultural consumption of swordfish as described below.

While swordfish may be large fish, frequently weighing over 100 lb, fishermen in the American Samoa fleet commonly handle fish of this size, including other billfish, large tunas, and sharks. Because none of the alternatives are expected to result in changes in the conduct of the fishery, including gear types used, areas fished, or a race to fish (which might be seen in a fishery significantly constrained by an ACL), no alternative would result in a safety issue for fishermen at sea.

Longline fishing activities and consuming MUS are not known to result in public health issues. None of the prescribed alternatives are likely to have detrimental effects on American Samoa cultural fishing practices because the alternatives do not change where American Samoa longliners are allowed to fish, where other gear types can fish, or how the fishermen use or share their fish. Allowing American Samoa vessels to retain more swordfish, could positively impact the availability of swordfish for cultural uses, e.g., longliners could give away fish products to the community for non-commercial purposes. Swordfish are traditionally shared in the villages and with village chiefs (Severance and Franco 1989). As a result, none of the alternatives are expected adversely affect subsistence use of resources. Therefore, none of the alternatives would have the potential for environmental justice concerns.

4.4.1 Alternative 1: No Action/Status Quo: Continue to allow up to 10 swordfish to be retained per trip

Under Alternative 1, there would continue to be instances where swordfish are caught during normal fishing operations and, when retained, the number would accumulate to be greater than the limit of ten (see Section 1.1). Based on logbook and observer data, over a period of four years from 2013-2016, longline fishermen discarded approximately 21,500 lb of swordfish, which NMFS believes occurred in part because of the swordfish trip limit. At the 2018 market price of \$3.37, discards would have represented a loss of potential revenue of over \$72,000 over the four years, or an annual fleetwide loss in revenue of just over \$18,100 and approximately \$1,393 per active vessel per year, based on the average number of Class C and D longline vessels that actively fished in 2017 and 2018.³³

³³ Lost revenue calculated using average swordfish price per pound in 2018 from WPacFIN (\$3.37) and swordfish discard data (2013-2016) provided by PIFSC.

4.4.2 Alternative 2: Modify Swordfish Retention Limit: Allow vessels to retain up to 25 swordfish per trip (unlimited if an observer is aboard)

Under Alternative 2, there would likely be positive impacts for the American Samoa longline fishery participants who may experience some additional revenues from being able to retain and sell a greater number swordfish caught by the longline fleet rather than discarding them. Although the additional revenue would likely be small, it could be important to fishery participants who are operating in a fishery that presently is at best marginally profitable (Pan et al. 2017). Positive impacts to the American Samoa community would likely result as a greater amount of swordfish would be landed in Pago Pago Harbor, with some of that fish likely given away for important cultural events or sold in the local market. Allowing greater numbers of additional swordfish retention would benefit the American Samoa fishing community by taking into consideration the importance of fishery resources to fishing communities as described under National Standard 8 of the Magnuson-Stevens Act.

4.4.3 Alternative 3: Remove Trip Limit: Allow vessels to retain an unlimited amount of swordfish (Council's Preferred Alternative)

Under Alternative 3, similar to Alternative 2, there would likely be positive impacts for fishery participants in the form of additional revenues. Although comparable increases in revenue from Alternative 2 to Alternative 3 are not available, the removal of the swordfish retention limit in its entirety is expected to lead to slightly more additional revenue for American Samoa longline fishermen from being able to retain and sell all swordfish caught by the longline fleet rather than discarding them after catching 25 individuals (on unobserved trips). Allowing swordfish retention would benefit the American Samoa fishing community by taking into consideration the importance of fishery resources to fishing communities as described under National Standard 8 of the Magnuson-Stevens Act.

4.5 Potential Effects on Management Setting

4.5.1 Marine Protected Areas and Other Marine Resources

In the past, prior to the establishment of the LVPA and the Rose Atoll Marine National Monument, there were no reported incidents of gear loss or vessel groundings by U.S.-flagged vessels. As a result, longline fishing under the No Action Alternative has not had any discernable impact on resources in the American Samoa National Marine Sanctuaries or the Rose Atoll Marine National Monument, and longline fishing in these areas would continue to be restricted by territorial and Federal laws, so none of these areas would be impacted. Fishing in general will continue to be subject to Federal logbook reporting, VMS, and observer placement to help to ensure the marine resources of these special areas are protected. None of the described alternatives are expected to have adverse impacts on EFH, HAPC, marine protected areas (MPAs), marine sanctuaries, or marine monuments, or other vulnerable marine or coastal ecosystems.

Additionally, longline fishing is not known to be a potential vector for spreading alien or invasive species as most vessels fish within the U.S. EEZ around American Samoa. For this reason, none of the alternatives are expected to increase the potential for the spread of alien species into or within American Samoa waters.

To date, there have been no identified impacts to marine biodiversity and/or ecosystem function from the American Samoa longline fishery and none of the alternatives is expected to result in impacts to these environmental features. The proposed alternatives would not result in major changes to the American Samoa longline fishery and would not have large adverse impacts to marine biodiversity and/or ecosystem function.

There are no known districts, sites, highways, structures or objects that are listed in or eligible for listing in the National Register of Historic Places within Federal waters of American Samoa where longline fishing activities are conducted. Additionally, longline fishing activities are not known to result in adverse impacts to scientific, historic, archeological or cultural resources because fishing activities occur generally miles offshore.

None of the alternatives would change requirements for longline fishing gear or deployment. The USCG and the NOAA OLE would continue to enforce gear-related regulations including length of float lines and the distance between hooks and floats and other gear requirements. Under Alternatives 1 and 2, which retain a swordfish retention limit, the need for NOAA OLE and the USCG to monitor and enforce the swordfish limit on a per-trip basis would remain. Alternative 3 is expected to reduce the enforcement and regulatory burden with respect to the NOAA OLE and USCG, as there would be no requirement for either group to monitor swordfish landings by the American Samoa longline fleet. None of the alternatives would threaten a violation of Federal, state, or local law or requirements imposed for environmental protection.

4.6 Other Potential Effects

None of the described alternatives are expected to have impacts (adverse or beneficial) that will lead to other significant effects. For example, while removal of the swordfish retention limit would ease necessary enforcement efforts by USCG and NOAA OLE regarding regulatory monitoring (see Section 4.5), the small reduction in effort by each of the agencies is not likely to lead to any other significant impact.

Similarly, none of the described alternatives are likely to have effects that are highly controversial. While the effects of removing a limit on swordfish catch may initially seem liberal, the context of the American Samoa limited entry permit longline fishery helps to buffer these concerns. It is unlikely that the effects of any of the described alternatives involve unknown or unforeseen risks given the straightforward nature of the fishery, its preferred targets, and the regulatory amendment itself. Incidental catch of swordfish in this fishery is likely to remain low regardless of management action taken in this scenario.

It is also unlikely that any of the described alternatives would establish precedent in making future changes to fishing trip limits for swordfish or related pelagic stocks as each management action is considered at the time it is proposed through Council deliberative process and public input.

The fishery is not expected to change in any way that would result in increases in greenhouse gas emissions.

4.7 Cumulative Effects

The Magnuson-Stevens Act and NEPA require analysis of the potential cumulative effects of a proposed action and its alternatives. Under NEPA, cumulative effects are defined as those combined effects on the human environment that result from the incremental impact of the proposed action and its alternatives when added to other past, present, and reasonably foreseeable future actions, regardless of what Federal or non-Federal agency or person undertakes such other actions (40 CFR 150.8.7). The cumulative impact analysis examines whether the direct and indirect effects of the alternatives considered on a given resource, interact with the direct and indirect effects of other actions on that same resource to determine the overall, or cumulative effects, on that resource. Section 3 describes the elements of the human environment that the alternative actions considered may affect, or the baseline for assessing the direct and indirect effects of the alternatives, as presented in Section 2. The cumulative effects analysis is organized by the following issues: target and non-target species, protected species, and socio-economic and management settings.

4.7.1 Target and Non-Target Species

4.7.1.1 Past, Present, and Reasonably Foreseeable Management Actions

Pelagic FEP

For a list of measures implemented under the Pelagic FMP and FEP, see <http://www.wpcouncil.org/fishery-ecosystem-plans-amendments/>.

NMFS Management Actions

In 2019, PIFSC completed a benchmark stock assessment (Langseth et al. 2019) that determined that in 2017 the bottomfish multispecies stock complex in American Samoa was overfished and subject to overfishing. In response to this assessment, the Council requested that NMFS take Secretarial action under Section 304(e)(6) to reduce overfishing in fishing year 2020 while it develops a rebuilding plan. NMFS is currently evaluating the likely effectiveness of potential actions such as catch limits and closures.

4.7.1.2 Exogenous Factors Affecting Target and Non-Target Species

Variability in the Pelagic Environment

Catch rates of pelagic fish species vary over both time and space in relation to environmental factors (e.g., temperature) that influence the horizontal and vertical movement patterns and distribution of fish. Cyclical fluctuations in the pelagic environment affect pelagic habitats and prey availability at both high frequency (e.g., seasonal latitudinal extension of warm ocean waters) and low-frequency (e.g., El Niño-Southern Oscillation-related longitudinal extension of warm ocean waters). Low or high levels of recruitment of pelagic fish species are also strongly related to variation in the ocean environment.

The effects of such fluctuations on the catch rates of MUS, such as South Pacific swordfish, obscure the effects of the combined fishing effort from Pacific pelagic fisheries. During an El

Niño, for example, the purse seine fishery for skipjack tuna shifts over 1,000 km from the western to central equatorial Pacific in response to physical and biological impacts on the pelagic ecosystem (Lehodey et al. 1997). Future ocean shifts are likely to cause changes in the abundance and distribution of pelagic fish resources, which could contribute to cumulative effects. For this reason, accurate and timely fisheries information is needed to produce stock assessments that allow fishery managers the ability to regulate harvests based on observed stock conditions.

Climate Change and Ocean Productivity

The global mean temperature has risen 0.76° C over the last 150 years, and the linear trend over the last 50 years is nearly twice that for the last 100 years (IPCC 2007; IPCC 2014). Climate change effects are already being observed in a wide range of ecosystems and species from all regions of the world (Walther et al. 2002; Rosenzweig et al. 2008). There is high confidence, based on substantial new evidence, that observed changes in marine systems are associated with rising water temperatures as well as related changes in ice cover, salinity, oxygen levels, pH (acidity), and circulation. These changes include shifts in ranges and changes in algal, plankton, and fish abundance (IPCC 2007; IPCC 2014).

The seasonal north-south movements of many large pelagics appear to track the similar peak migration of primary productivity. Using remotely-sensed chlorophyll³⁴ concentrations from satellite observations, Polovina et al. (2008) found that over the past decade, primary productivity in the North Pacific Subtropical Transition Zone has declined an average of 1.5% per year, and a 3% per year decline has been occurring at the southern limit of the transition zone. The expansion of the low-chlorophyll waters is consistent with global warming scenarios based on increased vertical temperature stratification of the world's oceans in the mid-latitudes. Expanding oligotrophic³⁵ portions of large subtropical gyres will, in time, lead to a reduction in chlorophyll density and carrying capacity there, which will in turn impact the abundance of pelagic species.

A recent study using an the spatial ecosystem and population dynamics model³⁶ (SEAPODYM), suggests that by the end of this century, ocean temperatures in the WCPO will increase to levels that will not support bigeye populations in the WCPO (J. Sibert, PFRP, pers. comm. July 2008). An international program called CLIOTOP (climate impacts on oceanic top predators) is currently gathering information on climate change and its effects on pelagic ecosystems. Within this group, the SEAPODYM model is being applied to investigate the future management of tuna stocks and other highly migratory species in the context of climate and ecosystem variability, as well as to investigate potential changes due to greenhouse warming.

Climate change is not known to have a large impact on fish stocks harvested by the American Samoa longline fishery in terms of biomass or recruitment. In the future, it is possible that climate change may lead to changes in the distribution of tuna and other pelagic species. The Council and NMFS will continue to consider impacts of climate change on fish stocks under its management

³⁴ Chlorophyll is the green pigment found in phytoplankton that absorbs light energy to initiate the process of photosynthesis.

³⁵ Meaning waters where relatively little plant life or nutrients occur, but are rich in dissolved oxygen.

³⁶ The model based on advection-diffusion-reaction equations explicitly predicts spatial dynamics of large pelagic predators, while taking into account data on several mid-trophic level components, oceanic primary productivity and physical environment.

purview and will include consideration of these impacts in stock assessments and fishery management actions. Monitoring of stock status will continue going forward, and impacts to stocks that might be occurring as a result of climate change are likely to be detected on a regional level (e.g. WCPO).

4.7.1.3 Cumulative Effects Analysis on Target and Non-Target Stocks

The American Samoa longline fishery is capped at 60 vessels under the limited entry program, but only 28 vessels (mostly in Classes C and D) have been active. None of the alternatives are expected to result in changes in how the fishery operates in terms of gear types used, areas fished, level of catch or effort, and target and non-target stocks. Given that the stocks of target and non-target species caught by the longline fishery are generally in good condition, the small potential increase in yield from the fishery from swordfish retention would have negligible impacts when added to impacts by other fisheries and the environment on the target and non-target stocks. The potential additive impacts of the alternatives in combination with the impacts of past, present, and future actions as well as exogenous factors are not expected to result in any significant cumulative impacts on target and non-target stocks.

4.7.2 Protected Species

4.7.2.1 Past, Present, and Reasonably Foreseeable Management Actions

Table 6 provides the ESA-listed species with potential to interact with the American Samoa longline fishery, and Table 7 lists the history of ESA consultations in the fishery. On April 3, 2019, NMFS reinitiated Section 7 consultation for the American Samoa longline fishery due to exceedance of the 3-year sea turtle ITS, and the recent listing of the oceanic whitetip shark, giant manta ray, and chambered nautilus.

4.7.2.2 Exogenous Factors Affecting Sea Turtles and Marine Mammals

Existing threats that are common to all species of sea turtles include:

- Human use and consumption (legal and illegal harvest of adults, juveniles and/or eggs)
- Sea turtle nesting and marine environment impacts (direct takes, predation, and coastal habitat development)
- Marine debris (entanglement and ingestion)
- Incidental capture in fisheries (trawl, gillnet and longline)
- Fluctuations in the ocean environment
- Implications of climate change

External factors affecting other marine mammals such as whales and dolphins include:

- Incidental take in fisheries
- Collisions with ship traffic, ship disturbance, and ship noise
- Marine debris and waste disposal

NMFS takes these factors into account when authorizing take levels associated with interactions that occur within the American Samoa longline fishery.

4.7.2.3 Cumulative Effects on Protected Species

The American Samoa longline fishery is capped at 60 vessels under the limited entry program, but around thirteen vessels (one in Class A; 12 in Classes C and D) were active in 2018. Cumulative effects of the U.S. fleets have been considered and authorized in the BiOps that apply to the domestic longline and other pelagic fisheries in the western Pacific. Based on the 2015 BiOp, existing levels of interactions are not anticipated to jeopardize the continued existence of protected species that occur within the area operation of the American Samoa longline fishery. Fishing effort levels are expected to be similar to recent years and interactions under multi-year catch or allocation limits are not expected to be higher than those currently authorized or analyzed by NMFS (Table 21). Besides allowing for the retention of swordfish that are caught under Alternatives 2 and 3, none of the alternatives are expected to result in changes in how the fishery operates in terms of gear types used, areas fished, level of catch or effort, and target and non-target stocks. As a result, the impacts of the alternatives when added to the impacts of past, present, and future actions, and exogenous factors are not expected to result in any significant cumulative impacts on protected species. Therefore, impacts to protected species are not expected to change under all alternatives.

4.7.3 Socio-economic and Management Settings

4.7.3.1 Past, Present, and Reasonably Foreseeable Future Actions

Modification of the American Samoa Limited Entry Permit Program

In 2002, the Council recommended that a limited entry permit program be established for the American Samoa longline fishery (50 CFR 665.816). This program was implemented by NMFS in 2006.³⁷ A permit is required for anyone using longline gear to fish for pelagic species within the EEZ surrounding American Samoa, and is required for anyone landing or transshipping pelagic species in American Samoa that were caught in the same way. This limited entry permit program distributed a maximum of 60 permits among its four size classes (A, B, C, and D).³⁸ Permits are issued by vessel size class, and permit holders are restricted to using vessels within their size class or smaller.

At its 171st Council meeting held on October 17-19, 2017 (82 FR 46771), the Council recommended to amend the American Samoa longline fishery limited entry program. The amendment would:

- Combine the four vessels size classes into two classes, A (vessels < 50 ft.) and B (vessel > 50 ft.);

³⁷ During the establishment of the LVPA, two of the 50 ft. longline vessels holding permits under the American Samoa Limited Entry Program were “grandfathered” to fish within the LVPA because of their long history of fishing in Federal waters encompassed by the LVPA. These two permit holders are the only individuals authorized to fish within the LVPA with longline vessels 50 ft. or longer. Only one of the grandfathered vessels has been actively fishing in the LVPA.

³⁸ Class A vessels are 40 ft. long or smaller, Class B vessels are longer than 40 ft. but no longer than 50 ft., Class C vessels are longer than 50 ft. but no longer than 70 ft., and Class D vessels are longer than 70 ft.

- Reduce the minimum landing requirement for vessel size class A from 1,000 lb to 500 lb per three year period;
- Limit permit eligibility to U.S. citizens and nationals, with no other qualifying criteria (i.e., documented history in the fishery would no longer be required), though the prior history ranking system would be maintained if there are two or more applications for the same available permit.
- Require that the entire minimum harvest amounts for the respective vessel classes are to be landed in American Samoa within a three-year permit period, but that the minimum harvests not be required to be caught within the U.S. EEZ around American Samoa;
- Specify a fixed three-year permit period that is the same as the three-year period to make an associated minimum harvest requirement; and
- Require that the minimum harvest period not restart in the event of a permit transfer, and if the minimum harvest amount has not been caught at the time of transfer, the new permit owner would be required to meet the harvest requirement based on the product of percentage of time left within the three-year permit period and the minimum harvest amount.

The proposed alternatives of the regulatory amendment at hand are not expected have negative impacts with respect to the proposed modification to the American Samoa limited entry permit program.

American Samoa LVPA Exemptions

In 2002, similar to the development of the American Samoa longline limited entry permit program, the Council and NMFS established the LVPA. At that time, the American Samoa longline fishery consisted of 55 alia aluminum catamarans (< 50 ft.) and 25 monohull longline vessels (> 50 ft.).³⁹ Existing Federal regulations prohibit large vessels, defined as vessels equal to or greater than 50 ft. in length (50 CFR 665.12), from fishing for pelagic management unit species within the LVPA, an area extending up to 50 nautical miles from the coastline of American Samoa (see 50 CFR 665.806). This rule was developed in response to the rapid growth of the territory's commercial longline fleet, and the concern that larger commercial vessels might come into conflict with or deplete fishing stocks targeted by small coastal fishing vessels, such as alias, that were also conducting longline fishing. Consequently, one of the main intentions of the LVPA was to provide a buffer between the alia and the large vessels (i.e., longline and purse seine vessels) by reducing the potential for gear conflict and catch competition between the two. Prior to 2002, there was no separation between fishing sectors, and the Instruments of Cession were not cited as a basis for either the 2002 LVPA rule or the limited entry permit program. Despite the development of the 2002 LVPA rule and limited entry permit program, by 2006, fewer than three alia vessels were operating in the fishery. By 2013, only one alia longline vessel has remained active in the fishery.

In 2014, the Tautai-O-Samoa Fishing Association, which is comprised of most of the active longline vessels in American Samoa, submitted a request to the Council to provide relief from the LVPA regulation that prohibited them from fishing generally within 50 nm from the shore of Tutuila, and Swains. The Council began exploring ways to assist the American Samoan longline fishery sector to correct the imbalance caused by increasing costs and declining fish prices, while minimizing potential impacts to other fisheries and ensuring the prevention of overfishing MUS.

³⁹ Thirty-two alia and 18 vessels greater than 50 feet were reported to be active in 2002.

In 2015, in response to years of increasing costs, declining longline catch rates, and negative economic returns, the Council recommended a regulatory amendment to provide an exemption to large vessels issued an American Samoa longline limited entry permit to fish within certain areas of the LVPA seaward of 12 nm from the shore around Swains Island, and Tutuila and Manua Islands. The Council's recommendation focused on removing regulatory measures that could reduce the cost of trips while increasing efficiency. The Council made its decision after several Council meetings, public hearings, and opportunities for the public to provide comments. The longline fishery's deteriorating economic conditions as well as dramatic reduction in levels of participation in the alia longline and troll fisheries and where these vessels operate spatially were major considerations in the Council's action.

NMFS implemented the LVPA exemption in January 2016 and in March 2016, the ASG filed a lawsuit challenging the LVPA exemption regulations, asserting that NMFS violated the "other applicable law" provision of the Magnuson-Stevens Act by failing to consider the Deeds of Cession with respect to the protection of cultural fishing rights of the people of American Samoa. On March 20, 2017, in *Territory of American Samoa v. NMFS, et al.* (16-cv-95, D. Haw), a Federal district court judge vacated and set aside the January 2016 rule. The Court held that the action was inconsistent with the "other applicable law" provision of the Magnuson-Stevens Act by not considering the protection of cultural fishing in American Samoa under the Instruments of Cession. On September 25, 2020, the 9th Circuit Court of Appeals reversed the District Court ruling, and unanimously held that NMFS properly considered the impact of the 2016 rule on cultural fishing and fishing communities under our Magnuson-Stevens Act analysis, regardless of whether it specifically considered the Deeds Instruments of Cession as applicable law. This decision is not yet final. Based on the annual review conducted by the Council and NMFS, during the one year the LVPA exemption was in effect (in 2016), catch rates improved for both albacore and yellowfin in some areas, with no adverse impact to the catch rates of alia and other coastal fisheries. Quarterly catch information indicates the LVPA exempted area occasionally produced higher catch rates than areas outside the LVPA. In 2018, at its 173rd meeting (June 11-13; 83 FR 23640), the Council considered this and other new information regarding cultural fishing in the territory and reiterated its previous recommendation to implement the LVPA exemption, though adding restrictions around some offshore banks and a four-year sunset provision (WPFMC 2018c). The Council has not yet deemed regulations carrying out this recommendation.

The proposed action is not expected to cause negative impacts to the American Samoa longline fishery because fishing activities and techniques will remain the same for all involved in the limited entry permit longline fishery. The Council further recommended annual monitoring of the American Samoa longline and troll catch rates, small vessel participation, and local fisheries development initiatives throughout this exemption.

U.S. Territorial Catch and Fishing Effort Limits

On October 28, 2014, NMFS published the final rule for Amendment 7 to the Pelagic FEP (79 FR 64097), which implements a management framework for specifying catch and effort limits and accountability measures for pelagic fisheries in the U.S. Pacific territories of American Samoa, Guam, and the CNMI. From 2014 through 2019, the Council has used the territorial catch, effort and allocation limit measure to recommend annual longline bigeye catch limits of 2,000 t for each U.S. participating territory and recommended that each territory could allocate up to 1,000 t of that

limit pursuant to specified fishing agreements. At its 178th meeting held June 25-27, 2019, in Honolulu, the Council considered and discussed issues relevant to bigeye tuna catch and allocation limits for the U.S. participating territories, including the most recent (2018) bigeye stock assessment, the recommendations of the Council's Scientific and Statistical Committee (SSC) made at the 132nd SSC meeting held June 18-20, 2019, and other relevant information including recommendations from other advisory bodies. At its 181st meeting held March 10-12, 2020, in Honolulu, Hawaii, after considering information about the recent fishery performance, effects of Hawaii longline fisheries on protected species, and public comments, the Council recommended a 2,000 t catch limit for each U.S. participating territory and that each can allocate up to 1,500 t of their catch limit through specified fishing agreements. The Council further recommended NMFS not authorize more than 3,000 t in total allocations in 2020.

4.7.3.2 Cumulative Effects on Socio-economic and Management Settings

There are wide-ranging factors variable with time that impact overall levels of participation in a given fishery and its associated fishing communities. Current factors affecting participation in the American Samoa limited entry permit longline fishery operating south of the Equator include high fuel costs, increased seafood imports, and restricted access to traditional fishing grounds. High fuel costs affect fishing participants by increasing the expenses necessary to actually go fishing, for example. The consequences are that fishery participants take fewer overall fishing trips, switch to less fuel-intensive fisheries closer to shore, or simply do not go fishing. These effects are believed to have assisted in the decline of the small vessel alia portion of the American Samoa longline fishery.

The implementation of any of the described alternatives would have no notable impact on fishing participation within the American Samoa fishing community, though it is possible that slight additional revenues from reduced regulatory discards may incentivize more individuals to remain in the fishery if they were considering exiting. The potential additive impacts of the described alternatives in combination with the impacts past, present, and future actions as well as exogenous factors are not expected to result to any significant cumulative impacts on socio-economic or management settings due to the negligible nature of the aggregate swordfish removal by the fleet over time.

4.7.4 Summary of Expected Impacts

Table 27 shows the summary of expected impacts of each proposed action alternatives.

Table 27. Summary of the expected impacts of each of the alternatives of the proposed action.

Resource	Alternative 1 (Status quo)	Alternative 2: Modify per- trip swordfish retention limit	Alternative 3: Remove per- trip swordfish retention limit	Comments
Swordfish retention in the fishery	Baseline: 10 swordfish allowed to be retained per fishing trip	25 swordfish/trip with observer; unlimited without observer	No limit on how many swordfish can be retained	There would be no change to the number of swordfish landed, but the amount discarded (discard rate) would differ among alternatives. Regulatory discard rate would be highest for Alternative 1, next highest for Alternative 2, and none for Alternative 3.
Expected fishery outcome	Baseline: 10 swordfish allowed to be retained per fishing trip	No change	No change	Besides allowing for increased retention of swordfish under Alternatives 2 and 3, the fishery would continue to operate as under baseline including location fished, gear used, and intensity of fishing.
Effects on physical environment	Currently not affecting physical features of the environment	No change	No change	There are no anticipated changes to the physical environment for any of the alternatives.
Effects on target stocks	Target: Albacore stocks not subject to overfishing or overfished	No change	No change	The alternatives would have no effect on albacore as the proposed action involves the retention of the incidental catch of swordfish.
Effects on swordfish (incidental catch)	Swordfish catch is shown in Table 4. This level of catch is sustainable taking into account mortality associated with hooking and landing the fish.	No change in landings, but reduction in discards.	No change in landings, but eliminate required discard (~ 73 swordfish/yr.) (Table 4).	Under all alternatives, catching swordfish incidentally has negligible impacts on the fishing mortality on the stock of Southwest Pacific swordfish (see Section 3.2.1).

Resource	Alternative 1 (Status quo)	Alternative 2: Modify per- trip swordfish retention limit	Alternative 3: Remove per- trip swordfish retention limit	Comments
Effects on other non-target fishes	Table 3 shows species, including non-target, in the American Samoa longline fishery.	No change	No change	The alternatives would have no effect on catch of non-target stocks as the proposed action involves the retention of the incidental catch of swordfish.
Effects on fishery discards	Swordfish discards would continue (see Section 4.2)	No change to discard rates of any species other than swordfish. Swordfish discards would continue at a reduced rate.	No change to discard rates of any species other than swordfish. Swordfish discards due to the retention limit would end.	No change for other fishery discards. Swordfish discards would stop under Alternative 3 and be reduced under Alternative 2. None of the alternatives have an effect on swordfish populations because of the minimal amount of swordfish caught in the American Samoa longline fishery (Section 3.2.1).
Effects on biodiversity or ecosystem functioning (e.g., predator-prey relationships)	No identified impacts to marine biodiversity and/or ecosystem function	No change	No change	The proposed alternatives would not result in major changes to the American Samoa longline fishery. The fishery has no identified large adverse impacts to marine biodiversity and/or ecosystem function.

Resource	Alternative 1 (Status quo)	Alternative 2: Modify per- trip swordfish retention limit	Alternative 3: Remove per- trip swordfish retention limit	Comments
Effects on protected species – sea turtles	Fishery is likely to adversely affect sea turtles, but not likely to jeopardize green, hawksbill, leatherback, olive ridley, and the South Pacific distinct population segment (DPS) of loggerhead sea turtles. NMFS reinitiated ESA Section 7 consultation on 4/3/2019 (Section 4.3).	No change	No change	None of the alternatives would change the way in which this fishery is conducted besides allowing swordfish retention. Gear requirements implemented to reduce sea turtle interactions would remain unchanged under Alternative 2 and 3. Therefore, impacts to sea turtles are not expected to change under all alternatives.
Effects on protected species – ESA-listed sharks and rays	Fishery interacts with both the giant manta ray and the oceanic whitetip shark (see Section 4.3), triggering the requirement for consultation. NMFS initiated consultation on April 3, 2019.	No change	No change	None of the alternatives would change the way in which this fishery is conducted besides allowing increased swordfish retention. Therefore, impacts to oceanic whitetip shark and giant manta ray are not expected to change under all alternatives.
Effects on protected species – ESA-listed corals	Fishery may affect but is not likely to adversely affect ESA-listed corals.	No change	No change	None of the alternatives would change the way in which this fishery is conducted besides allowing increased swordfish retention. Thus, there would be no significant impact to ESA-listed corals.

Resource	Alternative 1 (Status quo)	Alternative 2: Modify per- trip swordfish retention limit	Alternative 3: Remove per- trip swordfish retention limit	Comments
Effects on protected species – marine mammals	There have been no interactions between the American Samoa longline fishery and ESA-listed marine mammals. There have been some interactions with non ESA-listed mammals (see Section 3.2.2).	No change	No change	None of the alternatives considered in this document would modify operations of the American Samoa fishery in any way that would be expected to affect protected, endangered or threatened species or critical habitat in any manner not considered in previous ESA consultations or MMPA determinations.
Effects on protected species – seabirds	Table 15 shows current level of interactions with seabirds, which is very low.	No change	No change	None of the alternatives would change the way in which this fishery is conducted besides allowing increased swordfish retention. Thus, none of the alternatives would result in significant impact to seabirds.
Effects on ocean or coastal habitats including essential fish habitat (EFH)/habitat areas of particular concern (HAPC)	Longline fishing is not known to adversely impact EFH or HAPC.	No change	No change	None of the alternatives would change the way in which this fishery is conducted besides allowing increased swordfish retention.
Effects on unique areas such as parks, or ecologically critical areas including effects on deep coral ecosystems	Longline fishing is not having any discernable impact on resources in the American Samoa National Marine Sanctuaries or the Rose Atoll Marine National Monument.	No change	No change	None of the alternatives would change the way in which this fishery is conducted besides allowing increased swordfish retention.

Resource	Alternative 1 (Status quo)	Alternative 2: Modify per- trip swordfish retention limit	Alternative 3: Remove per- trip swordfish retention limit	Comments
Effects on the introduction or spread of invasive species	Longline fishing is not known to be a potential vector for spreading alien or invasive species as most vessels fish within the U.S. EEZ around American Samoa.	No change	No change	None of the alternatives would increase the potential for the spread of alien species into or within American Samoa waters.
Effects on historical, or important scientific or cultural resources (including shipwrecks and traditional fishing areas)	Longline fishing activities are not known to result in adverse impacts to scientific, historic, archeological or cultural resources because fishing activities occur generally miles offshore.	No change	No change	None of the alternatives would impact historical, or important scientific or cultural resources in the American Samoa as these do not occur where longline fishing activities are conducted.
Effects on fishery participants including social or economic effects interrelated with natural or physical environmental effects	Per-trip swordfish retention limit in the American Samoa longline fishery may result in lost revenue and resource for home and cultural consumption.	Retaining limited number of swordfish could result in additional revenue (\$3.37/lb) and resource for home and cultural consumption.	Retaining swordfish could result in additional revenue (\$3.37 lb) and resource for home and cultural consumption.	Under Alternatives 2 and 3, retaining an additional average of 5,000 lb of swordfish per year, would provide fishery participants (active Class C and D longline vessels) an estimated \$18,100 (\$1,393 per active vessel) per year of potential revenue and additional resource for home and cultural consumption.
Effects on safety at sea and effects on other public health and safety	There are no known effects on public health and safety including safety at sea.	No change	No change	None of the alternatives are expected to result in changes in the conduct of the fishery, including gear types used, areas fished, or a race to fish; therefore, no alternative would result in a safety issue for fishermen at sea.

Resource	Alternative 1 (Status quo)	Alternative 2: Modify per- trip swordfish retention limit	Alternative 3: Remove per- trip swordfish retention limit	Comments
Effects on fishing communities	Limiting swordfish retention reduces potential benefits to fishing communities.	Allowing increased swordfish retention would benefit fishing communities via increased per trip revenue and additional resource for home and cultural consumption.	Allowing increased swordfish retention would benefit fishing communities via increased per trip revenue and additional resource for home and cultural consumption.	Alternatives 2 and 3 would increase benefits to the American Samoa fishing community over the status quo.
Effects on enforcement	NOAA Office of Law Enforcement (OLE) and U.S. Coast Guard (USCG) monitor vessel compliance with applicable regulations and laws through vessel monitoring systems and vessel boarding at sea.	Management and compliance monitoring would continue.	Management and compliance monitoring would continue. Alternative 3 would reduce the enforcement and regulatory burden with respect to the NOAA OLE and USCG, as there would be no requirement for either group to monitor swordfish landings.	All alternatives require OLE and USGS monitoring vessel compliance with applicable regulations and laws through vessel monitoring systems and vessel boarding at sea.
Other Effects: Environmental Justice	Management measures are not expected to have large and adverse on the environment including human health, or adversely affect subsistence use of resources.	No effects	No effects	None of the alternatives would have the potential for environmental justice concerns.

Resource	Alternative 1 (Status quo)	Alternative 2: Modify per- trip swordfish retention limit	Alternative 3: Remove per- trip swordfish retention limit	Comments
Climate change effects: Greenhouse Gases	Fishery is small therefore, not having global or local climate change from greenhouse gas emissions.	No change	No change	Under all alternatives, the fishery would not change in any way that would result in increases in greenhouse gas emissions.
Other effects: Potential for the proposed action to establish a precedent for future actions with large effects or represent a decision in principle about a future consideration.	Each management action is considered at the time it is proposed through Council deliberative process and public input.	No change	No change	None of the described alternatives are expected to have impacts (adverse or beneficial) that will lead to other significant effects.
Other effects: Potential for highly uncertain effects or involvement of unique or unknown risks.	The American Samoa fishery is closely monitored through logbooks and observer coverage.	No change	No change	It is unlikely that the effects of any of the alternatives involve unknown or unforeseen risks given the fishery is well-managed and closely monitored.
Other effects: Consistency with local laws and requirements imposed for environmental protection.	The USCG and the NOAA OLE enforce gear-related regulations in the American Samoa longline fishery and the fishery operates in compliance with local and territorial laws.	No change	No change	None of the alternatives would violate Federal, state or local laws or requirements imposed for environmental protection.

5 APPLICABLE LAWS

Section 303 of the Magnuson-Stevens Act requires that any fishery management plan prepared by any fishery management council or by the Secretary of Commerce contain conservation and management measures that are consistent with the National Standards of the Act, other provisions of the Act, regulations implementing recommendations by international fishery management organizations and any other applicable law. This section identifies provisions of the other applicable laws that the NMFS and the Council have identified the proposed action must comply with, and rational for why this action is consistent with each applicable law.

5.1 National Environmental Policy Act

In accordance with the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) implementing regulations, and NOAA Administrative Order (NAO) 216-6A – *Compliance with the National Environmental Policy Act, Executive Orders 12114, Environmental Effects Abroad of Major Federal Actions; 11988 and 13690, Floodplain Management; and 11990, Protection of Wetland*, NMFS must consider the effects of its proposals on the environment before taking action. As part of this process, NMFS and the Council provide opportunities for the involvement of interested and affected members of the public before a decision is made. CEQ published revised NEPA regulations on July 16, 2020 that enter into effect on September 14, 2020 (see 85 FR 43304). This EA was under development prior to September 14, 2020, and thus, has been prepared in accordance with the CEQ NEPA regulations that applied prior to the new regulations entering into effect, as well as the existing NOAA NEPA procedures found in NAO 216-6A and its associated Companion Manual.

On June 29, 2020, NMFS published the proposed rule to remove the swordfish retention limit, and requested public review and comments on the proposed rule and draft EA dated May 29, 2020 (85 FR 38837). The comment period ended July 14, 2020. NMFS received comments from three submitters on the proposed rule. NMFS considered public comments in finalizing the EA and in making its decision on the proposed action, and responds to comments in the final rule. The NMFS Regional Administrator will use information in this EA to consider the effects of the proposed action on the human environment, taking into consideration public comments on the proposed action presented in this document, and to determine whether the proposed action would have a significant environmental impact requiring the preparation of an environmental impact statement.

5.2 Coastal Zone Management Act

The Coastal Zone Management (CZM) Act requires a determination that a recommended management measure has no effect on the land, water uses, or natural resources of the coastal zone or is consistent to the maximum extent practicable with an affected state's enforceable coastal zone management program. On May 26, 2020, NMFS determined that the action is consistent to the maximum extent practicable with the enforceable policies of the approved coastal zone management program of American Samoa and requested the programs' review of and concurrence with its determinations. American Samoa did not respond, so we infer consistency consistent with 15 CFR 930.41.

5.3 Endangered Species Act

The Endangered Species Act (ESA) provides for the protection and conservation of threatened and endangered species. Section 7(a)(2) of the ESA requires Federal agencies to ensure that any action authorized, funded, or carried out by such agencies is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of the critical habitat of such species. Pursuant to Section 7 of the ESA, NMFS has evaluated the American Samoa longline fishery for potential effects to ESA-listed species under the jurisdiction of NMFS. The conclusions of these consultations are summarized in Section 3.2.2.3.

On April 3, 2019, and again on May 6, 2020, under the authority of ESA Sections 7(a)(2) and 7(d), NMFS documented in the respective memoranda that the continued operation of the American Samoa deep-set longline fishery will not likely jeopardize the continued existence of species listed as threatened or endangered, result in the destruction or adverse modification of designated critical habitat, or result in the agency making irreversible or irretrievable commitments of resources during the period of consultation under the ESA. Specifically, NMFS determined that there was no new information that would lead us to reconsider the core assumptions and conclusions reached in the 2015 BiOp for leatherback turtle, South Pacific loggerhead turtle, Indo-West Pacific scalloped hammerhead shark, humpback whale, sperm whale, and six reef building corals. As a result, NMFS found that the 2015 BiOp remains valid for these species during the period of reinitiated consultation. We incorporate information about the effects of the fishery on from the most recent ESA Biological Evaluation (NMFS 2019a) into this EA, Section 3.2.2.6.

5.4 Marine Mammal Protection Act

The MMPA prohibits, with certain exceptions, the take of marine mammals in the U.S. 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 gives NMFS, as delegated by the Secretary of Commerce, the authority and duties for all cetaceans (whales, dolphins, and porpoises) and pinnipeds (seals and sea lions, except walruses). With this responsibility, NMFS required to prepare and periodically review stock assessments of marine mammal stocks.

Under Section 118 of the MMPA, NMFS must publish, at least annually, a List of Fisheries that classifies U.S. commercial fisheries into one of three categories. These categories are based on the level of serious injury and mortality of marine mammals that occurs incidental to each fishery. Specifically, the MMPA mandates that each fishery be classified according to whether it has frequent, occasional, or a remote likelihood of or no known incidental mortality or serious injury of marine mammals. A Category I fishery is one with frequent incidental mortality and serious injury of marine mammals. A Category II fishery is one with occasional incidental mortality and serious injury of marine mammals. A Category III fishery is one with a remote likelihood or no known incidental mortality and serious injury of marine mammals. According to the 2020 List of Fisheries (85 FR 21079; April 16, 2020), the American Samoa longline fishery is a Category 2 fishery.

Because the proposed action would not modify vessel operations or other aspects of the longline fisheries of American Samoa in any way that would change interaction rates with marine mammals, the proposed action is not expected to affect marine mammals in any manner not

previously considered or authorized by the commercial fishing take exemption under Section 118 of the MMPA.

5.5 National Historic Preservation Act

The National Historic Preservation Act requires Federal agencies undergo a review process for all federally funded and permitted projects that will affect sites listed on, or eligible for listing on, the National Register of Historic Places. There are presently no known districts, sites, highways, cultural resources structures or objects listed in or eligible for listing in the National Register of Historic Places in the EEZ around American Samoa or in adjacent areas of the high seas in international waters where pelagic longline fishing activities are conducted. Because longline fisheries are conducted in deep waters far offshore and do not affect bottom features, neither current nor future longline fishing activities would be expected to affect submerged resources such as shipwrecks that could occur in offshore areas.

5.6 Executive Order (E.O.) 12866 (Regulatory Impact Review)

The regulatory philosophy of E.O. 12866 stresses that, in deciding whether and how to regulate, agencies should assess all costs and benefits of all regulatory alternatives and choose those approaches that maximize the net benefits to the society. NMFS prepared a draft Regulatory Impact Review (RIR) (Appendix A).

A “significant regulatory action” means any regulatory action that is likely to result in a rule that may:

1. Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal government or communities;
2. Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
3. Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

Raise novel legal or policy issues arising out of legal mandates, the President’s priorities, or the principles set forth in the Executive Order (E.O.). Based on the costs and benefits discussed in the RIR (Appendix A) and the above criteria, none of the alternatives appears to have the potential to constitute a “significant” action under E.O. 12866.

5.7 E.O. 13132 (Federalism)

The objective of E.O. 13132 is to guarantee the Constitution's division of governmental responsibilities between the Federal government and the states. Federalism implications are defined as having substantial direct effects on states or local governments (individually or collectively), on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government. This action is not expected to contain policies with Federalism implications because it would not affect or alter the relationship between the Federal government and the government of the American Samoa.

5.8 Information Quality Act

The information in this document complies with the Information Quality Act and NOAA standards (NOAA Information Quality Guidelines, September 30, 2002) that recognize information quality is composed of three elements: utility, integrity, and objectivity. National Standard 2 of the Magnuson-Stevens Act states that an FMP's conservation and management measures shall be based upon the best scientific information available. In accordance with this national standard, the information product (i.e., this EA) incorporates the best biological, social, and economic information available to date, including the most recent biological information on, and assessment of, the pelagic fishery resources and protected resources, and the most recent information available on fishing communities, including their dependence on pelagic longline fisheries, and up-to-date economic information (landings, revenues, etc.). The policy choices, i.e., proposed management measures, contained in the information product are supported by the available scientific information. The management measures are designed to meet the conservation goals and objectives of the Pelagic FEP and the Magnuson-Stevens Act, and other applicable laws.

The data and analyses used to develop and analyze the measures contained in the information product are presented in this EA. Furthermore, all reference materials utilized in the discussion and analyses are properly referenced within the appropriate sections of the EA. The information products were prepared by Council and NMFS staff based on information provided by PIFSC and PIRO, and from published sources. The information product was reviewed by PIRO and PIFSC staff, and NMFS Headquarters (including the Office of Sustainable Fisheries). Legal review was performed by NOAA General Counsel Pacific Islands and General Counsel for Enforcement and Litigation for consistency with applicable laws, including but not limited to the Magnuson-Stevens Act, National Environmental Policy Act, Administrative Procedure Act, Paperwork Reduction Act, Coastal Zone Management Act, Endangered Species Act, Marine Mammal Protection Act, and Executive Orders 13132 and 12866.

5.9 Paperwork Reduction Act

The purpose of the Paperwork Reduction Act is to minimize the paperwork burden on the public resulting from the collection of information by or for the Federal government. It is intended to ensure that the information collected under the proposed action is needed and is collected in an efficient manner (44 U.S.C. 3501(1)). Neither the proposed action nor alternatives would establish any new permitting or reporting requirements.

5.10 Administrative Procedure Act

All Federal rulemaking is governed under the provisions of the Administrative Procedure Act (APA) (5 U.S.C. Subchapter II) which establishes a “notice and comment” procedure to enable public participation in the rulemaking process. Under the APA, NMFS is required to publish notification of proposed rules in the *Federal Register* and to solicit, consider and respond to public comment on those rules before they are finalized. The APA also establishes a 30-day waiting period from the time a final rule is published until it becomes effective, with certain exceptions.

The removal of the swordfish retention limit complies with the provisions of the APA. In developing the proposed action, the Council held public meetings, provided opportunities for the

public to comment on the proposed action and alternatives, and considered comments from the public and advisory bodies in making its recommendations.

On June 29, 2020, NMFS published the proposed rule to remove the swordfish retention limit, and requested public review and comments on the proposed rule and draft EA dated May 29, 2020 (85 FR 38837). The comment period ended July 14, 2020. NMFS received comments from three submitters on the proposed action. NMFS considered public comments in finalizing the EA and in making its decision on the proposed action, and responds to comments in the final rule.

5.11 Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 et seq.) requires government agencies to assess and present the impact of their regulatory actions on small entities including small businesses, small organizations, and small governmental jurisdictions. The assessment is done by preparing a Regulatory Flexibility Analysis and Final Regulatory Flexibility Analysis (FRFA) for each proposed and final rule, respectively. Under the RFA, an agency does not need to conduct an IRFA or FRFA if a certification can be made that the proposed rule, if adopted, will not have a significant adverse economic impact on a substantial number of small entities.

Based on the available information presented in this EA, NMFS has determined that all vessels federally permitted under Pelagic FEP are small entities under the SBA's definition of a small entity, i.e., they are engaged in the business of fish harvesting (NAICS Code: 114111), are independently owned or operated, are not dominant in their field of operation, and have annual gross receipts not in excess of \$11 million.

NMFS further found that the implementation of this proposed action would not result in significant adverse economic impact to individual vessels. Furthermore, there would be little, if any, disproportionate adverse economic impacts from the action based on gear type, or relative vessel size. The proposed action also would not place a substantial number of small entities, or any segment of small entities, at a significant competitive disadvantage to large entities.

NMFS does not expect the proposed action to have a significant economic impact on a substantial number of small entities. As such, an initial regulatory flexibility analysis is not required and none has been prepared.

5.12 E.O. 12898 (Environmental Justice)

On February 11, 1994, President Clinton issued E.O. 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." E.O. 12898 provides that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." E.O. 12898 also provides for agencies to collect, maintain, and analyze information on patterns of subsistence consumption of fish, vegetation, or wildlife. That agency action may also affect subsistence patterns of consumption and indicate the potential for disproportionately high and adverse human health or environmental effects on low-income populations, and minority populations. A memorandum by President Clinton, which accompanied

E.O. 12898, made it clear that environmental justice should be considered when conducting NEPA analyses.⁴⁰

The American Samoa longline fishery is not known to 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 fishery does not pollute marine waters and so does 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.

NMFS does not expect any of the alternatives of the proposed action to have large effects to the environment that would result in a disproportionately large and adverse effect on minority or low-income populations. Therefore, there would not be a disproportionately high and adverse impact to minority or low-income populations with respect to the availability of fish, other environmental effects, or health effects if NMFS implements the proposed action.

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⁴⁰ “Each Federal agency should analyze the environmental effects, including human health, economic, and social effects of Federal actions, including effects on minority populations, low-income populations, and Indian tribes, when such analysis is required by NEPA. Memorandum from the president to the Heads of Departments and Agencies. Comprehensive Presidential Documents No. 279 (February 11, 1994).”

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7 PROPOSED REGULATIONS

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

PART 665--FISHERIES IN THE WESTERN PACIFIC

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

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

2. In § 665.813, revise paragraph (k) introductory text and remove paragraph (k)(5) to read as follows:

§665.813 Western Pacific longline fishing restrictions.

* * * * *

k) *South Pacific Longline Requirements.* When fishing south of the Equator (0° lat.) for western Pacific pelagic MUS, owners and operators of vessels longer than 40 ft. (12.2 m) registered for use with any valid longline permit issued pursuant to §665.801 must use longline gear that is configured according to the requirements in paragraphs (k)(1) through (k)(4) of this section.

(1) Each float line must be at least 30 m long.

(2) At least 15 branch lines must be attached to the mainline between any two float lines attached to the mainline.

(3) Each branch line must be at least 10 m long.

(4) No branch line may be attached to the mainline closer than 70 m to any float line.

APPENDIX A: REGULATORY IMPACT REVIEW

1. Introduction

This document is a regulatory impact review (RIR) prepared under Executive Order (E.O.) 12866, “Regulatory Planning and Review.” The regulatory philosophy of E.O.12866 stresses that in deciding whether and how to regulate, agencies should assess all costs and benefits of all regulatory alternatives, including the alternative of not regulating, and choose those approaches that maximize the net benefits to the society. Costs and benefits are to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider.

To comply with E.O. 12866, NMFS prepares an RIR for regulatory actions that are of public interest. The RIR provides a review of the problems, policy objectives, and anticipated impacts of regulatory actions. This RIR is for proposed removal of the swordfish trip limit in the American Samoa longline fishery to reduce regulatory discards, as recommended by the Western Pacific Fishery Management Council (Council).

2. Problem Statement and Management Objective

The proposed action would remove the limit on the number of swordfish that can be possessed and/or landed per trip by vessels holding an American Samoa limited entry longline permit operating south of the Equator. This proposed action is the Council’s preferred action.

Currently vessels holding an American Samoa longline limited entry Class B, C, or D permit, cannot retain or land more than ten swordfish per trip. As a result, fishermen may end up discarding incidentally caught swordfish that could otherwise be retained for sale, personal consumption, or sharing among members of the community. This action is needed to optimized fishery resources because the current trip limit for the longline fishery inherently leads to wasteful regulatory discards and lost revenue when additional swordfish catch could be provided to the small local market or community. The status quo stands contrary to several National Standards in the Magnuson-Stevens Fishery Conservation and Management Act. Additionally, this action is intended to increase efficiency of the fishery while maintaining safeguards for sea turtles and other protected species.

3. Description of the Alternatives Considered

Alternative 1: No Action (Status Quo)

Under Alternative 1, no changes would be made to current management measures, and vessels holding an American Samoa limited entry longline permit operating south of the Equator would continue to operate under the existing limit of ten swordfish per trip.

Alternative 2: Modify Trip Limit

In implementing Alternative 2, the trip limit would be updated to allow vessels operating in the American Samoa limited entry permit longline fishery south of the Equator to land up to 25

swordfish per trip without an observer. If an observer is present, fishermen would be allowed to retain an unlimited number of swordfish, comparable to Hawaii deep-set longline regulations.

Alternative 3: Remove Trip Limit (Preferred)

Alternative 3 would remove the swordfish trip limit for the American Samoa deep-set tuna targeting fishery.

4. Description of Affected Fishery and Economic Environment

This section provides summary information on the American Samoa longline fishery, the fishery directly affected by this rule, and of the economic environment within which this fishery operates. Section 3.3 of the EA provides more detailed description of the longline fishery and other fisheries in American Samoa, while Section 3.4 of the EA provides information on the socio-economic setting.

American Samoa-based pelagic fisheries

Pelagic fishing in American Samoa ranges from small-scale vessels traveling limited distance, to moderate-sized longline and troll vessels that fish primarily within EEZ waters, to large-scale purse seine vessels capable of catching tuna in the EEZ and distant high seas waters. These vessels, particularly purse seine vessels and larger longline vessels, deliver their catch to the American Samoa canneries, of which only one is now in operation. The cannery in American Samoa generally purchases albacore or other pelagic fish, while swordfish generally would be kept for personal consumption, sold to local markets, and/or given away within the local community.

The longline fishery currently operates as a limited access fishery with a maximum of 60 vessels under the Federal permit program. Longline fishing was introduced to American Samoa in 1995 by fishermen from Western Samoa. Initially longline fishing was carried out by alia, which are twin aluminum-hulled boats with fiberglass or wood superstructure ranging from 24-38 ft in length and powered by small gasoline outboard engines. Trips were roughly eight hours long and fishermen targeted albacore to be sold to the tuna cannery. By 1997, 33 alia vessels received general longline permits from NMFS to fish in Federal waters around American Samoa, with 21 actively fishing at that time, but activity among the alia vessels has dropped considerably. Since 2008, fewer than three alia actively fish each year. The large scale longline fishery consists of larger vessels, traveling over a greater range, setting more lines and hooks, and with greater fish storage capacity compared to small scale vessels. The fishery primarily targets albacore as well.

As of May 15, 2020, 43 vessels held American Samoa longline limited entry Class B, C, or D permits out of 60 available permits. Three additional vessels held Class A permits, however Class A vessels are sized 40 feet long or smaller and therefore these vessels are exempt from the limit on swordfish retention. Of the 43 vessels that exceed 40 feet in length, four are classified as Class B vessels (longer than 40 feet but no longer than 50 feet), twelve Class C vessels (longer than 50 feet but no longer than 70 feet), and 27 Class D vessels (longer than 70 feet). Twelve of the 43 vessels actively fished in 2018 (four Class C and eight Class D). An estimated 4.1 million pounds (lb) of pelagic species were landed by American Samoa longline vessels in 2018. These vessels landed 3.12 million lb of albacore and 522,422 lb of yellowfin tuna, while swordfish comprised 13,434 lb. The fleet completed 149 trips and deployed 2,185 sets using 6.0 million hooks over the course of the year.

Other fisheries or fishing categories that catch pelagic species include the troll fishery, purse seine and non-commercial fishing. In 2018, seven troll fishing vessels landed an estimated 24,037 lb of pelagic fish comprised primarily of skipjack, yellowfin, wahoo, and blue marlin. No swordfish were reported to have been caught by troll fishing vessels in 2018. The purse seine fishery primarily lands skipjack, but also lands yellowfin and other tunas, with little albacore. Non-commercial fishing includes fishing for recreation, subsistence, or to share catch with the community, and many fishing trips by all categories might be motivated by more than one non-commercial category, as well as for earning revenue.

American Samoa's Regional Economy

Fishing has historically played a crucial role in American Samoan culture and society. However, over the last half century, fishing has become less prominent as a central and organized community force. During this time, modern fishing gears and technologies were introduced, while tuna canneries became a major economic for in Pago Pago, combined with the dramatic increase in population size, combined to alter American Samoans' relationship with the ocean. Furthermore, American Samoa also experienced the development of domestic industrial-scale fisheries, including tuna processing, transshipment, and home port industries. While many traditions and village-based systems of governance have been maintained, the islands have experienced a shift from a subsistence-oriented economy, where sharing of fish was extremely important, to a cash-based economy, where fishing is often viewed as a more commercial venture.

The two most important economic sectors of the American Samoa's economy are the ASG, which receives income and capital subsidies from the Federal government, and tuna canning. Main imports include fish brought in for processing, while exports are primarily canned tuna and by-products such as fish meal and pet food. In 2017, the ASG employed 5,849 people (36% of the total workforce), while canneries employed 2,312 (14% of the workforce). Ancillary businesses involved in provisioning the fishing fleet also generated a notable number of jobs for local residents.

5. Analysis of the Alternatives

Neither action alternative is expected to result in adverse effects to fishery participants or communities compared to the status quo. Compared to the No-action Alternative, Alternatives 2 and 3 (Preferred) could have an economic benefit for the American Samoa longline fishery.

Under the No-action Alternative, longline fishermen would not be allowed to keep more than ten swordfish per trip. Based on logbook and observer data, over a period of four years from 2013-2016, longline fishermen discarded approximately 21,500 lb of swordfish, which NMFS believes occurred in part because of the swordfish trip limit. At the 2018 market price of \$3.37, and assuming that none of these discards were due to other factors such as shark predation, damage while being caught, small size, or other factors contributing to low marketability, or even taking up vessel hold space for more valuable catch, discards would have represented a loss of potential revenue of over \$72,000 over the four years, or an annual fleetwide loss in revenue of \$18,000 and approximately \$1,393 per active vessel per year, based on the average number of longline vessels that actively fished in 2017 and 2018. Not all swordfish retained would have been sold

commercially; some would be retained for personal consumption, either onboard, or after the trip, and/or shared with the local community, as is customary in American Samoa.

Under Alternative 2, fishermen would be allowed to retain up to 25 swordfish per trip, compared to ten under the No-action Alternative. If an observer is onboard, American Samoa-based longline fishermen could retain all swordfish. Alternative 2 would yield positive impacts to fishermen and the community, assuming at least some of the swordfish caught in excess of the current swordfish limit would be retained for sale, personal consumption, or to share with the community. Through observer data from fishing trips over those four years, NMFS identified two trips, out of 73 observed trips, in which more than 25 swordfish were caught. Under Alternative 2, all swordfish from both of those trips could have been retained, because an observer was onboard the trip. But given that on two out of 73 observed trips over those four years, swordfish catch exceeded 25, this appears to be a fairly rare occurrence, at roughly 2-3% of longline trips. As for swordfish catch numbering between 11 and 25, this appeared to occur on 20% of the observed trips (15 out of 73 trips), so it would be reasonable to infer that American Samoa longline fishing vessels caught more than ten and less than 25 swordfish during 20% of longline trips. Under Alternative 2, these fishermen would have the option to retain all swordfish caught, whether or not an observer was onboard during the trip.

Worth noting is that fishermen might actually discard swordfish for reasons other than the current swordfish retention limit. For instance catch may be of low value because of their small size, low weight, damaged while being caught or from shark predation, or because they take up vessel hold space that could go to more valuable catch. Since NMFS does not have information on the reasons that specific swordfish were discarded, the value of potentially retained fish will be estimated based on the assumption that all discarded fish were discarded as a result of the cap on swordfish retention.

Alternative 3 (Preferred) is the least restrictive of the action alternatives. It would remove the limits on the number of swordfish that may be landed or on the vessel during any given American Samoa-based longline fishing trip south of the Equator. Since all American Samoa longline fishing vessel trips could keep all incidental swordfish catch, regardless of whether or not an observer is onboard, Alternative 3 would provide the most potential revenue gain among the three alternatives.

The proposed action and non-preferred action alternatives would likely have a negligible impact on the overall supply of swordfish, both locally and nationally, and would not directly influence the price that consumers pay for swordfish. The American Samoa longline fishery targets albacore and lands far fewer swordfish incidentally while fishing for albacore.

6. Impacts of the Preferred Alternative on Net National Benefits

Due to limited data availability, as well our limited understanding of the biological, economic, and social linkages of American Samoa's longline fishery and associated economic sectors, it is difficult to predict how fishery participants and other stakeholders would respond to the preferred alternative and how production operations and markets would be affected. It is thus difficult to predict how the total future stream of national benefits and costs (to both producers and consumers) would be affected. However, this action, with minor benefit to longline fishermen and negligible impact to swordfish supply, is anticipated to have a small positive net national benefit as

it is designed to enhance domestic harvests of swordfish by American Samoa-based longline vessels without jeopardizing the existence of any protected species or their habitats.

7. Distributional Changes in Net Benefits

The action alternatives are expected to have little, if any, distributional effects among different fisheries. It is not likely that other domestic fisheries catch will be noticeably different as a result of the occasional increased retention rate and landings of swordfish by the American Samoa-based deep-set longline fishery.

8. Changes in Income and Employment

Both Alternatives 2 and 3 might increase the amount of swordfish landed and, therefore, swordfish landing revenues by American Samoa longline fishermen, although only by a small amount relative to overall revenues. It is unlikely that businesses providing fuel, supplies, equipment and provisioning services would notice any change in income as a result of this action.

9. Cumulative Impacts

None of the alternatives are expected to result in cumulatively significant adverse impacts when considered in conjunction with other existing or future conservation and management measures that affect the American Samoa-based longline fishery.

10. Determination of Significance under Executive Order 12866

In accordance with E.O. 12866, NMFS has made the following determinations:

This rule is not likely to have an annual effect on the economy of more than \$100 million or adversely affect in a material way the economy, a sector of the economy, productivity, jobs, the environment, public health or safety, or state, local, or tribal governments or communities.

This rule is not likely to create any serious inconsistencies or otherwise interfere with any action taken or planned by another agency. This rule is not likely to materially alter the budgetary impact of entitlements, grants, user fees or loan programs or the rights or obligations of recipients thereof.

This rule is not likely to raise novel or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in E.O. 12866.