

Amendment 7

Fishery Ecosystem Plan for the American Samoa Archipelago

Discontinue Rebuilding Plan for American Samoa Bottomfish and Implement Annual Catch Limits and Accountability Measures for Fishing Years 2024 to 2026

Including a Draft Environmental Assessment and Regulatory Impact Review

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Abstract

The Western Pacific Fishery Management Council (Council) proposes to amend the Fishery Ecosystem Plan for the American Samoa Archipelago (FEP). If approved by the Secretary of Commerce, Amendment 7 would discontinue the rebuilding plan for the American Samoa bottomfish stock complex, which the National Marine Fisheries Service (NMFS) determined to be not overfished or experiencing overfishing in September 2023. The proposed management action would also implement new annual catch limits (ACLs) and accountability measures (AMs) for the fishery pursuant to the rulemaking authority under Section 303(a) of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

NMFS and the Council manage fishing for bottomfish management unit species (BMUS) in Federal waters around American Samoa through the FEP and implementing regulations, as authorized by the Magnuson-Stevens Act. On May 2, 2022, NMFS and the Council established a rebuilding plan for the fishery through Amendment 5 to the FEP and implementing regulations (87 FR 25590). This management action was based on a 2019 stock assessment (Langseth et al. 2019) that analyzed bottomfish as a multi-species complex and found the stock to be overfished and experiencing overfishing. In June 2023, NMFS Pacific Islands Fisheries Science Center (PIFSC) completed a new benchmark stock assessment for bottomfish in American Samoa (Nadon et al. 2023), which individually assessed nine BMUS: *Aphareus rutilans*, *Aprion*

virescens, *Caranx lugubris*, *Etelis coruscans*, *Lethrinus rubrioperculatus*, *Lutjanus kasmira*, *Pristipomoides flavipinnis*, *P. zonatus*, and *Variola louti*. On September 21, 2023, NMFS determined that none of the nine American Samoa bottomfish stocks assessed in the 2023 benchmark assessment were overfished or subject to overfishing, and none of the stocks has been overfished in 2017 or in any year since (the last data year in the 2019 assessment). The NMFS Pacific Islands Regional Office (PIRO) notified the Council of this determination and informed them that they may amend the FEP to discontinue the rebuilding plan and set new ACLs and AMs under section 303(c) Magnuson-Stevens Act.

At its 197th meeting in December 2023, the Council took action to recommend discontinuing the rebuilding plan and implementing ACLs and AMs for nine assessed BMUS for fishing years 2024–2026, in accordance with the ACL process approved by NMFS, and in consideration of the best available scientific, commercial, and other information. This draft environmental assessment (EA) analyzes the potential environmental effects of the following Alternatives (*See section 2.3*):

Alternative 1, the no action or status quo Alternative, would not make any changes to existing rebuilding plan for the bottomfish fishery.

Alternative 2 would amend the FEP to discontinue the rebuilding plan, and would set ACLs and AM's for fishing years 2024–2026. Alternatives 2a–2c would have the same post-season AM; if the average catch for the previous three years exceeds the ACL, the ACL in the following fishing year would be reduced by the amount of the overage.

Alternative 2a would implement an aggregate ACL for the nine American Samoa BMUS that were assessed in the 2023 stock assessment.

Alternative 2b would implement single-species ACLs for the nine assessed BMUS for 2024–2026 and establish *E. coruscans* as an indicator species for *E. carbunculus* and *P. flavipinnis* as an indicator species for *P. filamentosus*. ACLs would be set based on risk of overfishing determined by analyses of interagency working groups. (Council preferred Alternative)

Alternative 2c would implement single-species ACLs for the nine assessed BMUS for 2024–2026 and establish *E. coruscans* as an indicator species for *E. carbunculus* and *P. flavipinnis* as an indicator species for *P. filamentosus*. ACLs would be set based on a more conservative risk of overfishing than indicated by the results of the working group analyses.

Copies of this EA can be found by searching on RIN 0648-BN03 at www.regulations.gov, or by contacting the Responsible Official or Council at the above address.

How to Comment

NMFS is seeking public comment on proposed Amendment 7, including a draft EA and Regulatory Impact Review. Comments are due on the date specified in the instructions. You may submit comments by either of the following methods:

- Electronic Submission: Submit all electronic comments via the Federal e-Rulemaking Portal. Go to www.regulations.gov and enter NOAA-NMFS-2024-0088 in the Search box, click the “Comment” icon, complete the required fields, and enter or attach your comments. Instructions on how to comment may also be found by searching on RIN 0648-BN03 at www.regulations.gov or by contacting the responsible official or Council at the above address.
- Mail: Send written comments to Sarah Malloy, Deputy Regional Administrator, NMFS Pacific Islands Region (PIR), 1845 Wasp Blvd. Bldg. 176, Honolulu, HI 96818

If you need assistance with this document, please contact NMFS at 808-725-5000.

ABBREVIATIONS

ABC – Acceptable Biological Catch
ACL – Annual Catch Limit
ACT – Annual Catch Target
AM – Accountability Measure
ASCA – American Samoa Code Annotated
B – biomass
 B_{MSY} – biomass at MSY
 B_{Year} – biomass in identified year
BiOp – Biological Opinion
BMUS – Bottomfish Management Unit Species
BSIA – Best Scientific Information Available
Council – Western Pacific Fishery Management Council
CEQ – Council on Environmental Quality
CFR – Code of Federal Regulations
CPUE – Catch per Unit of Effort
DMWR – American Samoa Department of Marine and Wildlife Resources
DPS – distinct population segment
EA – Environmental Assessment
ECS – Ecosystem Component Species
EEZ – Exclusive Economic Zone; Federal waters
EFH – essential fish habitat
ESA – Endangered Species Act
F – fishing mortality
FMP – fishery management plan
 F_{MSY} – fishing mortality rate that produces MSY
 F_{Year} – fishing mortality in indicated year
FEP – Fishery Ecosystem Plan for the American Samoa Archipelago
ft – foot or feet
HAPC – habitat area(s) of particular concern
kg – kilogram or kilograms
lb – pound or pounds
LOF – List of Fisheries; NMFS list of fisheries that are subject to certain provisions of the
M – natural mortality of a stock
m – meter or meters
Magnuson-Stevens Act – Magnuson-Stevens Fishery Conservation and Management Act
MBTA – Migratory Bird Treaty Act
MFMT – Maximum Fishing Mortality Threshold
MMPA – Marine Mammal Protection Act
MPA – marine protected area
MSST – Minimum Stock Size Threshold
MSY – Maximum Sustainable Yield
National Standard – NS

NEPA – National Environmental Policy Act
nm – nautical mile
NMFS – National Marine Fisheries Service
NOAA – National Oceanic and Atmospheric Administration
OLE – NOAA Office of Law Enforcement
OFL – Overfishing Limit
P* – Probability of Overfishing
PIFSC – NMFS Pacific Islands Fisheries Science Center
PIRO – NMFS Pacific Islands Regional Office
SAFE – American Samoa Annual Stock Assessment and Fisheries Evaluation Report
SDC – status determination criteria
SEEM – Social, economic, ecological, and management uncertainty
SFD – NMFS PIRO Sustainable Fisheries Division
SIS – NOAA Species Information System
SSC – Scientific and Statistical Committee of the Council
USFWS – United States Fish and Wildlife Service
USCG – United States Coast Guard
WPacFIN – Western Pacific Fisheries Information Network
WPRFMC – Western Pacific Regional Fishery Management Council
WPSAR – Western Pacific Stock Assessment Review

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1 Introduction

The Western Pacific Regional Fishery Management Council (WPRFMC, or the Council) proposes to amend the Fishery Ecosystem Plan for the American Samoa Archipelago (FEP, WPRFMC 2009). If approved by the Secretary of Commerce, Amendment 7 would discontinue the rebuilding plan for American Samoa bottomfish, which the National Marine Fisheries Service (NMFS) determined to be not overfished or experiencing overfishing in September 2023. The proposed management action would also implement new annual catch limits (ACLs) and accountability measures (AMs) for the fishery. NMFS prepared this Environmental Assessment (EA) in accordance with the requirements of National Oceanographic and Atmospheric Administration’s (NOAA) Administrative Order (NAO) Section 216-6A, “Compliance with the National Environmental Policy Act, Executive Orders 12114, Environmental Effects Abroad of Major Federal Actions; 11988 and 13690, Floodplain Management; and 11990, Protection of Wetlands” and the associated Companion Manual. NAO 216-6A requires review under the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations, and other related authorities including review of environmental consequences on the human environment prior to making a decision. Section 1 provides background to understand the fishery and the proposed Alternatives, purpose and need for action, and management history. The proposed Alternatives are described in Section 2. The affected environment and analyses of the potential impacts on the human environment are in Sections 3 and 4, respectively. References cited are listed in Section 5.

1.1 Background Information

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) established the Council in 1976 to develop management plans for fisheries within the United States Fishery Conservation Zone around Hawai‘i, U.S. Pacific territories, commonwealth, and possessions of the United States in the Pacific Ocean (16 U.S.C. § 1801 *et seq.*). NMFS and the Council manage fishing for bottomfish management unit species (BMUS) in the U.S. Exclusive Economic Zone (EEZ; generally 3-200 nm from shore) around American Samoa through the FEP.

There are 11 BMUS managed under the FEP: eight snappers, one emperor, one jack, and one grouper (Table 1). All 11 species are wide-ranging Indo-Pacific tropical coastal species found generally between East Africa and Tahiti, including Hawai‘i (except for *Lethrinus rubrioperculatus*, *Pristipomoides flavipinnis*, and *Variola louti*). The black jack (*Caranx lugubris*) is the only circumtropical species. These species typically inhabit deep-slope areas from 100 m to 400 m, with *Aprion virescens*, *C. lugubris*, *Lutjanus kasmira*, *L. rubrioperculatus*, and *V. louti* habitat extending to shallow areas (< 10 m depth).

Table 1: American Samoa Bottomfish Management Unit Species.

Family	Scientific name	Samoan name(s)	English common names
Emperor (Lethrinidae)	<i>Lethrinus rubrioperculatus</i>	filoa-paomumu	spotcheek emperor, redgill emperor

Family	Scientific name	Samoan name(s)	English common names
Grouper (Serranidae)	<i>Variola louti</i>	papa, velo	yellow-edged lyretail, lunartail grouper, yellow-edged lyretail grouper
Jack (Carangidae)	<i>Caranx lugubris</i>	tafauli	black jack, trevally
Snapper (Lutjanidae)	<i>Aphareus rutilans</i>	palu-gutusaliva	rusty jobfish, red snapper, silvermouth
Snapper	<i>Aprion virescens</i>	asoama	green jobfish, gray snapper, jobfish
Snapper	<i>Etelis carbunculus</i>	palu-malau	Ruby snapper, red snapper, deep-water red snapper
Snapper	<i>Etelis coruscans</i>	palu-loa	flame snapper, red snapper, deepwater longtail red snapper
Snapper	<i>Lutjanus kasmira</i>	savane	common bluestripe snapper, blueline snapper, bluestripe snapper
Snapper	<i>Pristipomoides filamentosus</i>	palu-'ena'ena	crimson jobfish, pink snapper
Snapper	<i>Pristipomoides flavipinnis</i>	palu-sina	golden eye jobfish, yelloweye snapper
Snapper	<i>Pristipomoides zonatus</i>	palu-ula, palu-sega	oblique-banded snapper, snapper

In 2020 NMFS determined the multi-species bottomfish stock complex was overfished and experiencing overfishing (85 FR 26940, May 6, 2020), and the fishery has been managed under a rebuilding plan since May 2022 (87 FR 25590, May 2, 2022). The rebuilding plan implemented an ACL of 5,000 lb of BMUS, and harvests from both territorial and Federal waters are counted toward the ACL. The rebuilding plan also includes an in-season AM and a higher performance standard. As an in-season AM, if NMFS projects that the fishery will reach the ACL in any year, the fishery will be closed in Federal waters for the remainder of that year. As a higher performance standard, if the total annual catch exceeds the ACL during a year, NMFS will close the fishery in Federal waters until NMFS and the Territory of American Samoa implement a coordinated management approach to ensure that catch in Federal and territorial waters is maintained at levels that allow the stock to rebuild, or the rebuilding plan is modified based on the best scientific information available.

In June 2023, NMFS Pacific Islands Fisheries Science Center (PIFSC) completed a benchmark stock assessment for bottomfish in American Samoa (Nadon et al. 2023). The 2023 benchmark assessment was reviewed by a panel of stock assessment experts under the Western Pacific Stock Assessment Review (WPSAR) framework. The WPSAR panel convened in Pago Pago, American Samoa on February 17–23, 2023. The panel found the assessment update adequate for management use (Franklin et al 2023). The Council’s Scientific and Statistical Committee (SSC) received the WPSAR review report and the peer-reviewed benchmark stock assessment at its 148th meeting on June 14, 2023. The SSC accepted the 2023 benchmark assessment as the best scientific information available (BSIA) for setting harvest limits for fishing year 2024 to 2026.

The SSC also recommended that the Council direct staff to convene the Probability of Overfishing (P*, pronounced p-star) and Social, Economic, Ecological and Management uncertainty (SEEM) working groups to quantify uncertainties and recommend a risk of overfishing at which to set the acceptable biological catches (ABCs) and ACLs.

On August 23, 2023, PIFSC sent a memorandum to PIRO stating their determination that the 2023 benchmark stock assessment is BSIA for managing American Samoa BMUS. None of the assessed stocks were experiencing overfishing or were overfished, and none had been overfished in 2017 or any year since. On September 20, 2024, NMFS formally determined that none of the American Samoa bottomfish stocks assessed in the 2023 benchmark assessment were overfished or subject to overfishing. PIRO notified the Council of this determination on September 21, 2023. Based on this determination, NMFS notified the Council that they may amend the FEP to discontinue the rebuilding plan and associated ACLs and AMs implemented to rebuild the stock, and set new ACLs and AMs for the 2024–2026 fishing years to prevent overfishing under section 303(c) Magnuson-Stevens Act.

1.2 Proposed Action

The proposed action would amend the FEP to discontinue the rebuilding plan for American Samoa BMUS established by Amendment 5 and to implement new ACLs and AMs for fishing years 2024 to 2026. The proposed ACLs and AMs were developed in accordance with the Council’s ACL process as described in the FEP. This process includes methods by which an ACL may be reduced from the ABC based on social, economic, ecological, and management uncertainties through a SEEM analysis (WPRFMC 2023c). An ACL may not exceed an ABC set by the SSC, in accordance with implementing regulations for National Standard (NS) 1 of the Magnuson-Stevens Act (50 CFR 600.310).

1.3 Purpose and Need for the Action

The purpose of this action is to amend the FEP to discontinue the rebuilding plan for American Samoa BMUS and to implement ACLs and AMs for fishing years 2024 to 2026 based on the results of the 2023 benchmark stock assessment. Doing so will comply with the requirements of the Magnuson-Stevens Act, the FEP, and implementing regulations that require implementation of ACLs and AMs for American Samoa BMUS based on the best scientific information available. This action is needed to prevent overfishing and to provide for long-term sustainability of fishery resources while allowing fishery participants to continue to benefit from their utilization.

1.4 Action Area

The Territory of American Samoa consists of five volcanic islands (Tutuila, Aunu‘u, Ofu, Olosega, and Ta‘ū) with steep, mountainous terrain and high sea cliffs, in addition to two coral atolls (i.e., Swains Island and Rose Atoll). The population in 2020 was 49,710 people (U.S. Bureau of the Census). Tutuila is the largest and most populous island in the territory, inhabited by over 95 percent of the total population. Tutuila is characterized by an extensive shelf area accompanied by offshore banks and barrier reefs. Tutuila is also the center of government and

business for the territory, and Pago Pago Harbor on Tutuila is one of the most sheltered natural deep-water harbors in the South Pacific Ocean (WPRFMC 2009).

The fishery management area for the FEP bottomfish fishery includes Federal waters (i.e. the EEZ; generally 3-200 nm from shore) around American Samoa (Figure 1). Bottomfish fishing primarily occurs in waters from the surface to 755 ft (230 m) around the islands and offshore banks of American Samoa, including Tutuila, Aunu'u, and the Manu'a Islands (Ta'u and Ofu-Olosega, approximately 54 nm east of Tutuila). Since June 3, 2013, commercial fishing has been prohibited in Rose Atoll Marine National Monument (78 FR 32996), which is approximately 80 nm east of Ta'u. The fishery does not fish in areas closed to fishing around the Islands of Tutuila and Aunu'u, which include several community and territorial marine protected areas (MPAs), including at Fagatele Bay and several National Marine Sanctuary Management Areas.

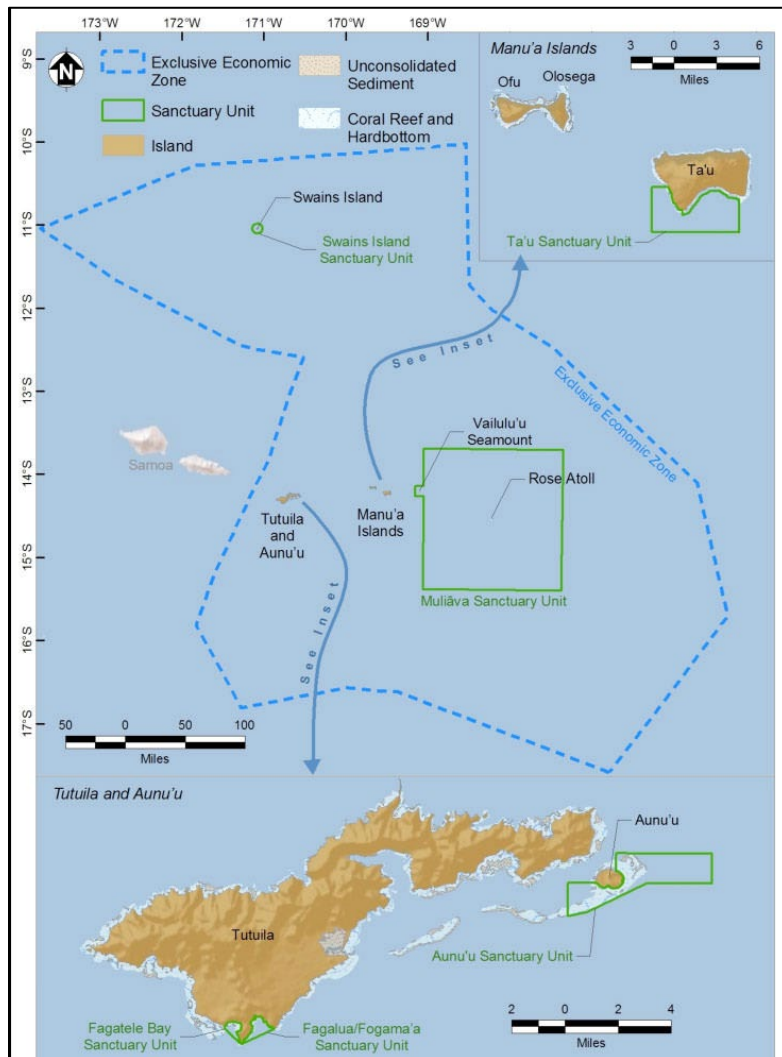


Figure 1: Samoan Archipelago with sanctuary units identified the Rose Atoll Marine National Monument (<https://americansamoa.noaa.gov/about/location.html>).

1.4.1 Overview of the Bottomfish Fishery

Throughout the development of the American Samoa bottomfish fishery in the 1900s, indigenous people harvested many of the same bottomfish species and used some of the same gears and techniques still utilized currently (WPRFMC 2009). Fishing for bottomfish primarily occurs using aluminum *'alia* catamarans less than 32 ft in length that are outfitted with outboard engines and wooden hand reels that fishermen use for both trolling and bottomfish fishing. Fishermen typically fish less than 20 nm from shore because few vessels carry ice (WPRFMC 2009).

Before 2019, NMFS assessed BMUS as a multi-species stock complex of 17 species (i.e., all 17 individual BMUS were assessed collectively as one unit). Stock assessments indicated the bottomfish stock complex was not experiencing overfishing and was not overfished, and catch limits were near 100,000 lb per year. The fishery consistently landed much less than these limits (Table 2). In 2018 and 2019, NMFS and the Council did not implement ACLs as they worked on an FEP amendment to update the MUS lists, though catch did not increase without ACLs in place. In 2019 NMFS implemented Amendment 4 to the FEP (84 FR 2767, February 8, 2019), which reclassified several BMUS as ecosystem component species (ECS). NMFS does not implement ACLs or associated accountability measures for ECS. Amendment 4 updated the BMUS to the current 11-species list (Table 1), which continued to be managed and assessed together as a multi-species stock complex. In 2019 NMFS completed a benchmark stock assessment on the revised BMUS complex (Langseth et al. 2019); this assessment showed the stock complex was overfished and experiencing overfishing. In 2020, NMFS notified the Council that the American Samoa bottomfish fishery was experiencing overfishing and was overfished. While the Council worked to develop a rebuilding plan, NMFS implemented an interim catch limit of 13,000 lb for much of 2020 and 2021. Between 2020 and 2022, American Samoa bottomfish fishermen caught an average of 4,114 lb annually (Table 2). Following the implementation of the rebuilding plan in 2022, the fishery landed 2,583 lb of BMUS in 2022, approximately 52 percent of the 5,000 lb ACL.

Table 2: Comparison of bottomfish catches to ACLs. The stock complex included 17 species from 2012 – 2018 and 11 species starting in 2019. ACLs were not specified in 2018 and 2019.

Year	Total BMUS Catch (lb)*	ACL (lb)
2012	3,648	99,000
2013	11,070	101,000
2014	16,260	101,000
2015	27,722	101,000
2016	24,819	106,000
2017	17,425	106,000
2018	12,811	No ACL
2019	11,399	No ACL
2020	7,697	13,000
2021	2,063	13,000

Year	Total BMUS Catch (lb)*	ACL (lb)
2022	2,583	5,000
2020-2022 average catch	4,114	
2012-2022 average catch	10,717	

*Source for 2012–2018 is WPRFMC 2020; for 2019 – 2022 is WPRFMC 2023a

Though the pelagic fisheries play a relatively larger role in American Samoa’s economy, insular fisheries hold fundamental socioeconomic and dietary importance (Levine and Allen 2009). In American Samoa, it is a traditional practice to share and distribute fish amongst the community, so the majority of American Samoa bottomfish are not sold, and this is particularly true over the past decade (WPRFMC 2023a). The demand for bottomfish in American Samoa varies depending on the need for fish at government and cultural events, and ‘*alia*’ fishermen may switch to bottomfish fishing during periods when longline catches or prices are low (WPRFMC 2023a). Fishing grounds in Federal waters around American Samoa are important for the harvest of deep-water snappers used for chiefly position entitlements and *fa’a lavelave* ceremonies (e.g., funerals, weddings, births, and special birthdays).

1.5 Overview of Bottomfish Biology and Distribution

Most BMUS prefer rocky bottom substrates or rocky reefs. The majority of the stock complex can be found at depths between 33 and 1,150 ft (10 and 350 m), but some species, such as the red snapper (*E. carbunculus*), can occur at depths up to 1,310 (400 m). The best information currently available shows that the majority of bottomfish habitat is in territorial waters (85 percent), and the rest (15 percent) is in the Federal waters primarily located on and around offshore banks (NMFS 2020).

All species in the complex are predatory fish and feed on fish, squid, mollusks, crustaceans, and zooplankton. Spawning has been recorded nearly year-round for most species, but is more common in warmer months and with peak activity occurring in some species around November and December. Spawning aggregations have been reported for red snapper (*E. carbunculus*) and lyretail grouper (*V. louti*). Sexual maturity and life span varies greatly among the stock complex. *P. sieboldii* reaches sexual maturity at three years old and has a lifespan of not more than eight years. In contrast, *P. filamentosus* is a slow growing, long lived species, with the oldest fish recorded at 44 years old (Nichols et al. 2020).

1.6 Overview of Fishery Management and Data Collection

NMFS and the Council manage bottomfish fishing in Federal waters around American Samoa in accordance with the FEP (WPRFMC 2009), which was developed by the Council and implemented by NMFS under the authority of the Magnuson-Stevens Act. The FEP emphasizes community participation, consideration of the habitat and ecosystem in its management structure, and other ecosystem- and community- based elements.

The American Samoa Division of Marine and Wildlife Resources (DMWR) manages bottomfish fishing from 0 to 3 nm from the shore. A joint federal-territorial partnership enforces federal fishery regulations, and the FEP requires the Council to produce an annual performance report

for the fishery (e.g., WPRFMC 2023a). Federal regulations prohibit bottom trawls, bottom gillnets, explosives, and poisons (50 CFR § 665.104 and 665.406). Territorial regulations also prohibit the use of explosives, poisonous substances, and electrical devices, in addition to specifying requirements for which cast nets, gill nets, seines, surround nets, and drag nets may be used (American Samoa Code Annotated (ASCA) § 24.0920 through 24.0933).

There are no general permitting or reporting requirements for bottomfish fishing in territorial waters around American Samoa. However, DMWR receives commercial sales data from a mandatory commercial receipt book system in accordance with territorial regulations. Currently, there are no federal permits or reporting requirements for bottomfish fishing in Federal waters around American Samoa. As noted above most fishing for bottomfish is non-commercial, so most catch data is collected through voluntarily participation in boat-based and shore-based creel survey programs. These programs are implemented by DMWR with the support of NMFS.

Stock status for the American Samoa bottomfish fishery is assessed by the PIFSC Fisheries Research and Monitoring Division's Stock Assessment Program, and stock status is reported in NOAA's Species Information System (SIS). The SIS database serves as the national repository for stock assessment results, status determination results, and ACL information. Following the 2023 benchmark stock assessment, stock status for American Samoa BMUS are reported in the SIS database as the following individual species or species groups: black jack (*C. lugubris*), common blueshrike snapper (*L. kasmira*), flame snapper complex (*E. carbunculus* and *E. coruscans*), golden eye jobfish complex (*P. filamentosus* and *P. flavipinnis*), green jobfish (*A. virescens*), oblique-banded snapper (*P. zonatus*), rusty jobfish (*A. rutilans*), spotcheek emperor (*L. rubrioperculatus*), yellow-edged lyretail (*V. louti*). *E. coruscans* serves as the indicator species for the flame snapper complex and *P. flavipinnis* serves as the indicator species for the golden eye jobfish complex.

1.6.1 Boat-Based Creel Survey Program

The boat-based creel survey program collects data on catch, effort, and participation for offshore fishing activities conducted by commercial and non-commercial fishing vessels. Surveys are conducted at main docks and boat ramps using two separate phases of data collection: participation counts and fishermen interviews. Participation counts are done by counting the number of boats absent from port, identifying the presence of boat trailers, and determining the type of gear used. The fishermen interviews document catch composition (including non-BMUS species), catch per unit effort (CPUE), length-weight information, catch disposition, and additional socioeconomic information. Size and weight of catch may be measured or estimated, depending on the fisher's cooperation. Survey days are randomly selected three to eight times per month. Surveys follow a random stratified design by survey area, weekday/weekend, and time of day (e.g., daytime and nighttime). The creel survey data are transcribed weekly into the NMFS Western Pacific Fisheries Information Network (WPacFIN) database (<https://apps-pifsc.fisheries.noaa.gov/wpacfin/home.php>).

1.6.2 Shore-Based Creel Survey Program

The shore-based creel survey program collects data on catch, effort, and participation for inshore fishing activities. These surveys randomly sample shore-based fishing and consist of both participation counts and fishermen interviews. Participation counts are done using a “bus route” method, with data collectors using predefined stopping points and time constraints to count the number of fishermen along the shoreline while recording gear type and number of gears. The fishermen interviews document catch composition (including non-BMUS species), CPUE, length-weight information, catch disposition, and additional socioeconomic information. Size and weight of catch may be measured or estimated, depending on the fisher’s cooperation. Survey dates are randomly selected two to four times per week and the surveys take place over eight-hour periods. Each sampling day has three period strata: morning, afternoon, and evening. Sampling is done in the major marina, ramps, and sections of the island shoreline. The creel survey data are transcribed weekly into the WPacFIN database.

1.6.3 PIFSC WPacFIN catch expansion algorithm

Once creel survey data are submitted to the WPacfin database, PIFSC uses an expansion algorithm to estimate total catch for the bottomfish fishery. The expansion algorithm utilizes two variables from creel surveys: 1) total effort; 2) average CPUE. The formula is as follows:

$$Total\ Catch = Total\ Effort \times Average\left(\frac{Catch}{Effort}\right)$$

Total effort is determined from the boat logs and participation counts that are created during boat- and shore-based creel surveys, respectively. Effort is analyzed at a trip level, whether it is a bottomfishing trip, troll trip, or spearfishing trip. The CPUE is derived from the total weight of the catch, as opposed to the number of fish caught. In plain language, total catch is the number of trips (i.e. boat or shore-based trip) per gear type (i.e. bottomfishing, trolling, or spearfishing) per type of day (i.e., weekday/weekend and/or time of day) multiplied by the average catch per trip per type of day.

The trip level effort, CPUE, and species information is expanded to determine the annual effort and CPUE for each fishing method. Including all species caught under each fishing method in the expansion accounts for the mixed-species nature of the fishery. PIFSC calculates the total catch of the BMUS by applying a species composition ratio that is generated from the catch composition reported in creel survey interviews. All of the non-BMUS species are removed from the final annual total catch estimates to generate a total catch estimate of BMUS for each gear type in the bottomfish fishery. Once the annual BMUS catch for each gear type is estimated, the estimated catch for each method is summed to generate the total annual BMUS catch (Figure 2).

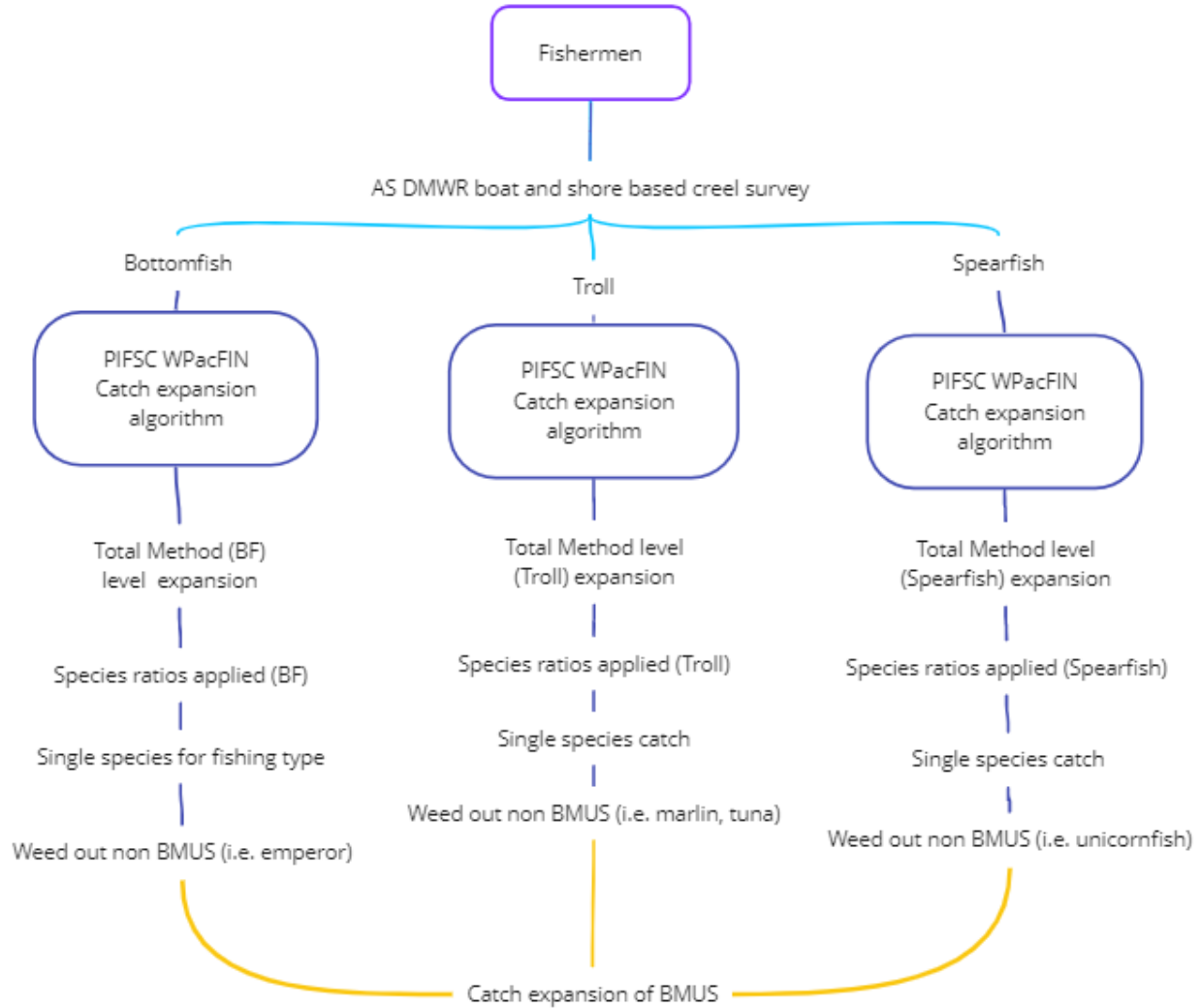


Figure 2: Flowchart of the catch expansion process of BMUS catch from creel survey data.

1.6.4 Dealer Reporting

American Samoa has a mandatory requirement for entities that sell any seafood products (e.g., fish dealers, hotels, and restaurants) to submit invoice reports to DMWR (ASCA § 24.0305). This commercial receipt book system collects information by the 16th day of every month, and is used to monitor locally sold fish and collect information by vendors who purchase fish directly from fishermen. The reported information typically includes the weight and number of each species purchased, the name of the fishermen providing the fish, the boat registration name and number as applicable, the name of the dealer, the date, the price paid, the type of fishing gear used, whether fish were taken in territorial or Federal waters, and other information as requested by DMWR. The submitted invoices usually compile daily trip landings.

1.7 Benchmark Stock Assessment and Status of the Stock

The Magnuson-Stevens Act requires that a fishery management plan (or FEP) specify objective and measurable criteria, or reference points, for determining when a stock is subject to overfishing or is overfished (50 CFR 600.310(c)). The FEP includes status determination criteria (SDC) that specify when a bottomfish stock is considered overfished or when overfishing is occurring (WPRFMC 2009). The maximum sustainable yield (MSY) is the largest long-term average catch that can be taken from a fish stock under prevailing environmental conditions. A stock is considered to be overfished when biomass (B) declines below the level necessary to produce the MSY on a continuing basis (B_{MSY}). This threshold is termed the minimum stock size threshold (MSST) and is expressed by the relationship $B/B_{MSY} < 1-M$, where M is the natural mortality of the stock. Thus, if the B/B_{MSY} ratio is less than $1-M$, the stock complex is considered overfished.

If the stock is not overfished, overfishing occurs when the fishing mortality rate (F) is greater than the fishing mortality rate that produces MSY (F_{MSY}) for one year or more. This threshold is termed the maximum fishing mortality threshold (MFMT) and is expressed as a ratio, $F_{year}/F_{MSY} = 1.0$. Thus, if the F_{year}/F_{MSY} ratio is greater than 1.0 for one year or more, overfishing is occurring. If a stock is overfished, then the threshold decreases proportionally to $B/MSST$.

Estimates of annual fishing mortality (F_{Year}) relative to MFMT and annual biomass (B_{Year}) relative to MSST were used to evaluate stock status for the nine assessed species (Figure 3, Table 3). Stock projections and corresponding probability of overfishing were calculated for 2022–2028 over a range of hypothetical eight-year catches for eight BMUS: *A. rutilans*, *A. virescens*, *C. lugubris*, *E. coruscans*, *L. rubrioperculatus*, *P. flavipinnis*, *P. zonatus*, and *V. louti*. For *L. kasmira*, the assessment found that, given the low proportion of the stock that is vulnerable to bottomfishing, it was impossible to determine fixed catch values that would result in either overfishing or overfished status. Therefore, the overfishing limit (OFL), defined as the catch that would result in a 50 percent risk of overfishing, was set to the MSY estimate for this species. There was insufficient data to assess *E. carbunculus* and *P. filamentosus*. The production model results indicate that all nine BMUS assessed were not overfished nor experiencing overfishing in 2021 (Nadon et al. 2023; Figure 3). In addition, the stock assessment found that none of the assessed species were overfished or experiencing overfishing in 2017 (the last data year in the previous assessment), or since.

The 2023 benchmark assessment differs significantly from previous assessments in several respects, and was the culmination of a three-year American Samoa bottomfish stock assessment improvement plan (Nadon and Bohaboy 2022). Through this plan, several issues with fisheries data were identified and corrected, making the data used in the 2023 assessment more reliable and robust. The 2023 assessment was therefore able to incorporate data through 2021, including historical catch from 1967 to 1985 using older government reports. A key additional improvement in the 2023 assessment was the use of single-species, age-structured models in the Stock Synthesis 3 modeling framework (Methot and Wetzol 2013). These improvements to the stock assessment methods led to the determination that none of the species were overfished or experiencing overfishing in 2017, as previously reported in the 2019 stock assessment (Langseth et al. 2019).

A timeline regarding the American Samoa BMUS overfished and overfishing stock status in 2020 is outlined above in Section 1.1. Relatedly, Section 1.1 also details the communication between PIFSC, PIRO, and the Council after the 2023 benchmark stock assessment led to the updated stock status determination, concluding American Samoa BMUS is not overfishing nor experiencing overfishing and that the FEP may be amended to discontinue the rebuilding plan.

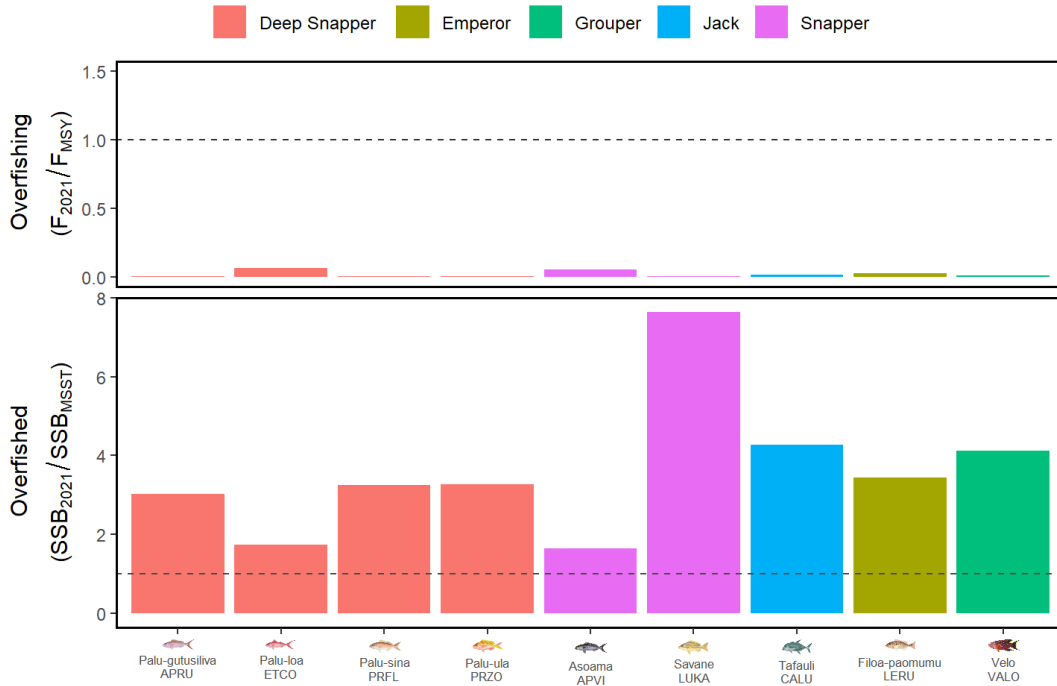


Figure 3: 2021 stock status of the nine assessed BMUS, showing the BMUS stocks are not overfished and they are not subject to overfishing. Source: Nadon et al. 2023

Table 3: Summary of selected metrics for American Samoa BMUS. Overfishing is defined by $F/F_{MSY} > 1$ and overfished status is defined by $SSB/SSB_{MSST} < 1$. Source: Nadon et al. 2023

BMUS	Samoan name	MSY (lb)	F/F_{MSY} 2021	SSB/SSB_{MSST} 2021	SSB 2021 (lb)	Average catch 2019-2021 (lb)	OFL 2026 (lb)	Status in 2021
<i>A. rutilans</i>	Palu-gutusaliva	4,762	<0.01	3.1	31,306	1,115	10,008	No overfishing, not overfished
<i>A. virescens</i>	Asoama	3,439	0.05	1.7	11,023	1,986	5,115	No overfishing, not overfished
<i>C. lugubris</i>	Tafauli	1,896	0.015	4.4	4,630	700	3,219	No overfishing, not overfished
<i>E. carbunculus</i>	Palu-malau	-	-	-	-	-	-	Unknown
<i>E. coruscans</i>	Palu-loa	3,461	0.05	1.7	28,440	1,038	5,445	No overfishing, not overfished
<i>L. rubrioperculatus</i>	Filoa-paomumu	5,247	0.02	2.8	21,164	1,057	8,863	No overfishing, not overfished
<i>L. kasmira</i>	Savane	18,210	<0.01	7.6	27,558	571	17,637	No overfishing, not overfished
<i>P. filamentosus</i>	Palu-‘ena-‘ena	-	-	-	-	-	-	Unknown
<i>P. flavipinnis</i>	Palu-sina	1,367	<0.01	3.2	7,055	148	2,844	No overfishing, not overfished
<i>P. zonatus</i>	Palu-ula	816	<0.01	3.3	4,409	94	1,609	No overfishing, not overfished
<i>V. louti</i>	Velo	1,014	<0.01	4.1	4,630	229	2,425	No overfishing, not overfished

1.8 Overview of ACL and AM Development Process

Federal regulations at 50 CFR 665.4 (76 FR 37285, June 27, 2011) require NMFS to implement ACLs and AMs, as recommended by the Council, based on the best scientific, commercial, and other information available for the fishery. In accordance with the Magnuson-Stevens Act and NS-1, this process begins with the OFL for each stock as determined by the stock assessment. The OFL is an estimate of the catch level above which overfishing is occurring and corresponds with the MFMT. In accordance with federal regulations at 50 CFR 600.310 implementing NS-1 of the Magnuson-Stevens Act and with the FEP, the OFL is set at a level of catch that corresponds to a 50 percent probability of overfishing (P^* , pronounced P-star). Next, the Council's SSC calculates an ABC that is set at or below the OFL for the stock. The SSC may reduce the ABC below the OFL in consideration of scientific uncertainty as determined through a P^* analysis. The P^* analysis is conducted by a working group that includes NMFS scientists and managers, Council staff, and fishery participants.

Once the ABC is set, the Council must recommend an ACL in consideration of social, economic, ecological, and management uncertainty (SEEM) factors following analysis by a SEEM working group (see Hospital et al. 2019 for SEEM considerations). The ACL may not exceed the ABC recommended by the SSC (50 CFR 600.310(f)(4)(i)). An ACL set below the ABC further reduces the probability that actual catch will exceed the ABC or OFL and result in overfishing. While the P^* analysis considers uncertainty arising from underreporting and misreporting of catch, the SEEM analysis is more forward-looking and considers uncertainty arising from concerns about compliance and/or management capacity. The Council may additionally set an ACT that is below the ACL to account for additional management or monitoring uncertainty. While management uncertainty must be accounted for in either the ACL or the ACT (50 CFR 600.310(f)(4)(i)), an ACT is not required under NS-1. The relationship between OFL, ABC, ACL, and ACT is described in Figure 4.

The final element in the ACL process is the inclusion of AMs. There are two categories of AMs, in-season AMs and post-season AMs. In-season AMs prevent an ACL from being exceeded and may include closing the fishery, closing specific areas, changing bag limits, or other methods to reduce catch. An ACT may be used as a reference point to implement in-season AMs in advance of catch levels approaching the ACL to ensure the ACL is not reached or exceeded. Post-season AMs serve to mitigate the effects of exceeding an ACL, should catch exceed the ACL in a given year. Post-seasons AMs may reduce the ACL and/or ACT in subsequent years if the ACL is exceeded in order to mitigate potential impacts to fish stocks. Additionally, NS-1 and the FEP describe performance standards that identify when a system of ACLs and AMs should be re-evaluated (50 CFR 600.310(g)(7)). If the fishery exceeds an ACL more than once in a four-year period, the Council is required to re-evaluate the ACL and AM process for the fishery and adjust the system as necessary to improve its performance and effectiveness in ensuring sustainability of the fishery.

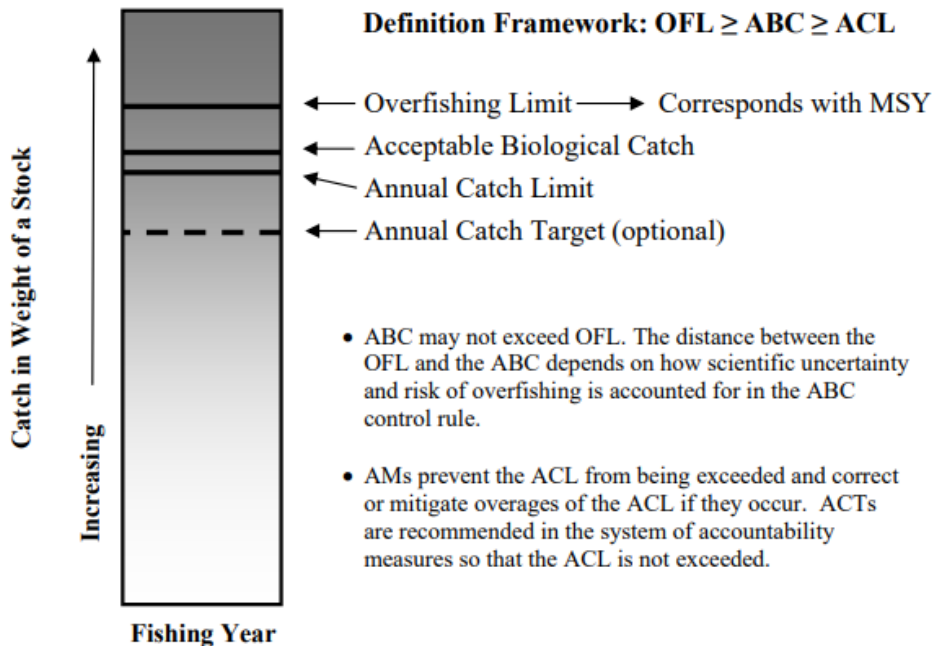


Figure 4: Relationship between OFL, ABC, ACL, and ACT.

1.9 Public review and Involvement

The proposed ACLs and AMs were developed through a public process. At its 148th meeting in June 2023, the Council’s SSC considered and discussed the outcomes of the WPSAR of the 2023 benchmark stock assessment, presented by WPSAR Panel Chair, Dr. Erik Franklin. In the same meeting, PIFSC released the revised 2023 benchmark assessment for American Samoa bottomfish (Nadon et al. 2023) incorporating the recommendations from the WPSAR review. The SSC considered this benchmark assessment to be BSIA. At its 195th meeting in June 2023, the Council received the presentation from PIFSC on the benchmark assessment, accepted the SSC BSIA recommendation, and directed staff to organize a working group to quantify the scientific uncertainty through the P* analysis and management uncertainty through the SEEM analysis.

At its 149th meeting held on September 12, 2023, the SSC heard the results of the P* analysis, and recommended setting nine single-species ABCs, utilizing *P. flavipinnis* and *E. coruscans* as indicator species for *P. filamentosus* and *E. carbunculus*, respectively. At its 196th meeting on September 19, 2023, the Council considered and discussed issues relevant to discontinuing the rebuilding plan and specifying ACLs and AMs for the American Samoa bottomfish fishery, including the ABC recommendations from the SSC at its 149th meeting and the results of the P* and SEEM working groups. The Council recommended an aggregate ACL for the nine assessed species and a post-season AM for overage adjustment for fishing years 2024 to 2026 as a preliminary preferred Alternative. The Council did not recommend an ACT during preliminary action. The Council took final action at its 197th meeting in December 2023, and recommended to discontinue the rebuilding plan and specify single-species ACLs from 2024-2026 for nine assessed species based on their respective probability of overfishing and management

uncertainty analysis scores. The Council changed from their initially preferred Alternative that included an aggregate ACL to an Alternative that includes nine ACLs based on single-species assessments after further consideration of the new BSIA and requirements under the Magnuson-Stevens Act and applicable National Standards. The Council also recommended a post-season AM that if the average catch of the three most recent years exceeds the specified ACL in a fishing year; the ACL for the following fishing year will be reduced by the amount of the overage. The Council did not recommend an ACT during final action.

All Council and SSC meetings were open to the public and advertised through notices in the *Federal Register* (88 FR 101, May 25, 2023; 88 FR 165, August 28, 2023, and 88 FR 230, December 1, 2023), and on the Council's website. The public had an opportunity to comment at the meetings on the proposed ACL specifications and AMs. There were no public comments pertaining to this action. NMFS will be accepting comments on the proposed Amendment, draft EA, and Regulatory Impact Review during the comment period for the proposed rule. To submit comments, go to www.regulations.gov and search for RIN 0648-BN03. NMFS will consider comments received prior to making a decision on any proposed rule.

1.10 NEPA Compliance

This draft EA applies CEQ NEPA Regulations currently in effect (See 50 C.F.R. § 1506.13) at the time the EA began. This EA began on February 26, 2024 and accordingly proceeds under the 2020 regulations, as modified by the Phase I revisions (effective date May 20, 2022), and revisions made through the Fiscal Responsibility Act of 2023 (effective date June 3, 2023).

1.11 List of Preparers

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NMFS PIRO

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Kate Taylor, Pacific Islands Region NEPA Coordinator, Reviewer

2 Descriptions of the Alternatives

The Alternatives considered in this document include a range of possible ACLs for the American Samoa bottomfish fishery. The SSC utilized the results of the P* analysis to set single-species ABCs while the Council utilized the results of the SEEM analysis to specify single-species ACLs. Although the estimate of the OFL and the calculation of the ABC are part of specifying the ACL, the establishment of these reference points is scientific in nature. The ABC and OFL reference points were used to develop the Alternatives, but are not a part of this proposed federal action.

2.1 Development of the Alternatives

The Council and its SSC used the approved process in the FEP (see section 1.8) to develop the ACL and AM recommendations for the American Samoa BMUS fishery for fishing years 2024 through 2026. These Alternatives were initially discussed at Council’s 196th meeting and final action was taken at the 197th meeting. Further details on the Council’s considerations for the development of American Samoa BMUS ACLs and AMs are described in the following sections.

2.1.1 Estimation of OFL

The peer-reviewed benchmark stock assessment for nine bottomfish species in the American Samoa Archipelago (Nadon et al. 2023) was presented to the SSC and the Council at their 148th and 195th meetings, respectively. The assessment used single-species, age-structured models into a Stock Synthesis modeling framework (Methot and Wetzel 2013) and concluded that all nine assessed species were neither overfished nor experiencing overfishing. *E. carbunculus* and *P. filamentosus* were not assessed due to insufficient data. An ACL cannot be set for an unassessed species because the overfishing limit (OFL) and the respective risk of overfishing at any given catch limit, is unknown. Therefore, the assessment proposed the use of *E. coruscans* and *P. flavipinnis*, respectively, as indicator species.

An indicator stock (species) is a stock with measurable and objective SDC that can be used to help manage and evaluate more poorly known stocks that are in a stock complex (50 CFR 600.310(d)(2)(ii)(A)). If an indicator species reaches management triggers such as an ACT or ACL, AMs would be applied to both the indicator species and to those species for which it indicates status. For example, if an indicator species exceeded its ACL during the fishing year and triggered an in-season AM closing the fishery, then no catch could be retained for both the indicator species and those species for which it indicates status. No catch limits are set for the poorly known stock, and, while catch of the poorly known stock may be monitored for use in future assessments, their catch is not tracked against the limit of the indicator species. In the present case, *E. coruscans* and *P. flavipinnis* are species for which stock status is known and there is sufficient information to track catch. They would be used to determine, or indicate, the respective statuses of *E. carbunculus* and *P. filamentosus*, which have similar life histories to *E. coruscans* and *P. flavipinnis*, and for which status is unknown.

The OFL (Table 4) for each species corresponds to a 50 percent probability of overfishing based on the terminal year of the specification. The OFLs for each of the BMUS are 10,009 lb for *A. rutilans*; 5,115 lb for *A. virescens*; 3,219 lb for *C. lugubris*; 5,445 lb for *E. coruscans*; 8,863 for *L. rubrioperculatus*; 17,637 for *L. kasmira*; 2,844 lb for *P. flavipinnis*; 1,609 lb for *P. zonatus*; and 2,425 lb for *V. louti*.

Table 4: The amount of catch (lb), which corresponds to probabilities of overfishing (P*, expressed as a percent) in fishing year 2026 for American Samoa BMUS. Source: Nadon et al. 2023

P*	<i>A. rutilans</i>	<i>A. virescens</i>	<i>C. lugubris</i>	<i>E. coruscans</i>	<i>L. rubrioperculatus</i>	<i>P. flavipinnis</i>	<i>P. zonatus</i>	<i>V. louti</i>
0.50	10,009	5,115	3,219	5,445	8,863	2,844	1,609	2,425
0.49	9,921	5,115	3,219	5,401	8,841	2,822	1,609	2,403
0.48	9,811	5,093	3,197	5,379	8,796	2,800	1,609	2,403
0.47	9,722	5,071	3,197	5,335	8,774	2,800	1,609	2,381
0.46	9,634	5,049	3,175	5,291	8,752	2,778	1,587	2,359
0.45	9,524	5,049	3,175	5,269	8,730	2,756	1,587	2,359
0.44	9,436	5,027	3,153	5,225	8,708	2,734	1,587	2,337
0.43	9,348	5,004	3,153	5,181	8,686	2,712	1,587	2,315
0.42	9,237	4,982	3,131	5,137	8,664	2,690	1,565	2,315
0.41	9,149	4,960	3,131	5,115	8,642	2,668	1,565	2,293
0.40	9,039	4,960	3,109	5,071	8,620	2,668	1,565	2,271
0.39	8,951	4,938	3,109	5,027	8,598	2,646	1,543	2,271
0.38	8,863	4,916	3,086	4,982	8,576	2,623	1,543	2,249
0.37	8,752	4,894	3,086	4,938	8,554	2,601	1,543	2,227
0.36	8,664	4,872	3,064	4,894	8,532	2,579	1,521	2,205
0.35	8,554	4,872	3,064	4,872	8,510	2,557	1,521	2,205
0.34	8,466	4,850	3,042	4,828	8,488	2,535	1,521	2,183
0.33	8,378	4,828	3,042	4,784	8,466	2,513	1,499	2,161
0.32	8,267	4,806	3,020	4,740	8,444	2,491	1,499	2,138
0.31	8,179	4,784	3,020	4,696	8,422	2,469	1,477	2,138
0.30	8,069	4,762	2,998	4,652	8,400	2,447	1,477	2,116
0.29	7,981	4,762	2,976	4,608	8,378	2,425	1,477	2,094
0.28	7,870	4,740	2,976	4,564	8,356	2,403	1,455	2,072
0.27	7,782	4,718	2,954	4,519	8,333	2,381	1,455	2,050
0.26	7,694	4,696	2,954	4,475	8,311	2,359	1,433	2,050
0.25	7,584	4,674	2,932	4,431	8,289	2,337	1,433	2,028
0.24	10,009	5,115	3,219	5,445	8,863	2,844	1,411	2,006
0.23	9,921	5,115	3,219	5,401	8,841	2,822	1,411	1,984

Table 5: The amount of catch expressed as MSY (lb), which corresponds to probabilities of overfishing (P*, expressed as a percent) for *L. kasmira*. Source: Nadon et al. 2023

P*	MSY¹
0.50	17,637
0.49	17,549
0.48	17,461
0.47	17,372
0.46	17,306
0.45	17,218
0.44	17,130
0.43	17,042
0.42	16,976
0.41	16,887
0.40	16,799
0.39	16,733
0.38	16,645
0.37	16,557
0.36	16,491
0.35	16,402
0.34	16,314
0.33	16,226
0.32	16,138
0.31	16,050
0.30	15,961
0.29	15,873
0.28	15,785
0.27	15,675
0.26	15,587
0.25	15,498
0.24	15,410
0.23	15,322
0.22	15,212
0.21	15,124
0.20	15,013

¹ The median MSY estimate was determined to be the OFL for *L. kasmira*, because the fishery selects for only larger individuals and the harvest of *L. kasmira* by the bottomfish fishery is sustainable even at elevated F values. For more information regarding the different methods used in the stock assessment for *L. kasmira*, please see Section 2.5 of Nadon et al. (2023).

2.1.2 Calculation of ABC, ACL, and ACT

Using the final 2023 benchmark stock assessment, the Council at its 195th meeting on June 27, 2023, directed staff to organize working groups to conduct the P* and SEEM analyses. P* and SEEM scores represent a percent reduction in the probability of overfishing from the OFL. The OFL is set at a level of catch that results in a 50 percent probability of overfishing for that stock. The P* score is used to set the ABC lower than the OFL, while the SEEM score is used to set the ACL and/or ACT at a level that is equal to or below the ABC. For example, a P* score of 1 would indicate that a 1 percent reduction in the probability of overfishing from the OFL is needed to account for the scientific uncertainty, and the ABC would be set at the level of catch that results in a 49 percent probability of overfishing. A SEEM score of 1 would indicate that a 1 percent reduction in the probability of overfishing from the ABC is needed to account for the SEEM factors, and the ACL would then be set at the level of catch that results in a 48 percent probability of overfishing.

The P* working group meeting was held at the Tradewinds Hotel in American Samoa on August 29, 2023. The working group was comprised of assessment and life history scientists, fishery managers, and bottomfish fishermen. To determine a P* score for the scientific uncertainty for each assessed stock, the working group scored four scientific uncertainty dimensions: 1) assessment information; 2) uncertainty characterization; 3) stock status; and 4) productivity-susceptibility. The group reviewed the information in the 2023 benchmark stock assessment for the American Samoa bottomfish fishery and quantified scores for the nine species assessed. The working group assigned the same score across all species for assessment information, uncertainty characterization, and stock status uncertainty dimensions. For the assessment information uncertainty dimension, the group agreed that the assessment provides estimates of exploitation, biomass, and MSY-derived benchmarks. The assessment information dimension was therefore assigned a 4.0, which scales to contribution of 1.1 to the total P* value. The working group scored the uncertainty characteristic dimension of the P* at 3.5 for all species because uncertainties were carried forward into the assessment projections. For stock status, none of the nine assessed species are overfished or experiencing overfishing, so the group scored this dimension as 0 for all species. The scores for productivity and susceptibility differed across species, ranging from 3.8 to 6.3. The shallow bottomfish species have moderate productivity with higher spawning rates and low susceptibility compared to the deep bottomfish that are more long-lived species. The P* analysis quantified reduction scores for nine species listed in Table 6 from 50 percent probability of overfishing (WPRFMC 2023b). P* scores for the nine BMUS ranged from an 8 to 11 percent reduction in P* from the OFL.

The SEEM working group meeting was held at the Tradewinds Hotel in American Samoa on August 30, 2023. The working group was comprised of an economist/social scientist, fishery managers, and bottomfish fishermen. The working group utilized standardized SEEM dimensions and criteria. The SEEM analysis quantified a reduction in the risk of overfishing of zero for the social, economic, and ecological uncertainty dimensions. The management uncertainty dimension of the SEEM analysis is further broken down into monitoring uncertainty and compliance and management uncertainty. Although there is mandatory licensing and reporting for commercial fishers by the American Samoa government, participation in the creel survey is voluntary and there is a high uncertainty in the catch expansion in this data limited fishery. For example, in 2022 PIFSC was not able to do a catch projection expansion for the

American Samoa BMUS until October 2022 due to the limited amount of surveys. These factors were taken into account by the SEEM working group in considering monitoring uncertainty. Therefore the SEEM working group assigned a reduction of 2.5 for monitoring uncertainty and 1.5 for compliance and management uncertainty, resulting in a total management uncertainty score of 4 for all species. This resulted in a total SEEM score of 4 for all assessed species, which would set the P* for each species' ACL at 4 percent lower than the P* for the ABC (Table 6) (WPRFMC 2023c).

Table 6: P* and SEEM analyses results for American Samoa BMUS. Source: WPRFMC 2023b; 2023c

BMUS	Samoan name	P* Score	P* for ABC	2024-2026 ABC (lb)	SEEM Score	P* for ACL
<i>A. rutilans</i>	Palu-gutusaliva	11	39	8,951	4	35
<i>A. virescens</i>	Asoama	10	40	4,960	4	36
<i>C. lugubris</i>	Tafauli	9	41	3,131	4	37
<i>E. coruscans</i>	Palu-loa	11	39	5,027	4	35
<i>L. rubrioperculatus</i>	Filoa-paomumu	9	41	8,642	4	37
<i>L. kasmira</i>	Savane	8	42	16,976	4	38
<i>P. flavipinnis</i>	Palu-sina	10	40	2,668	4	36
<i>P. zonatus</i>	Palu-ula	10	40	1,565	4	36
<i>V. louti</i>	Velo	10	40	2,271	4	36

At its 149th meeting in September 2023, the SSC recommended to set nine, single-species ABC's for the assessed American Samoa BMUS species for fishing years 2024, 2025, and 2026 in accordance with the results of the P* analysis and based on BSIA from the 2023 benchmark stock assessment. The SSC further recommended the use of *P. flavipinnis* as an indicator species for *P. filamentous* and the use of *E. coruscans* as an indicator species for *E. carbunculus*. ABC's for each of the nine assessed species are listed in Table 6.

As set forth by the implementing regulations for NS-1 of the MSA, the ACL may not exceed the ABC for any species and ACLs in coordination with AMs must prevent overfishing (50 CFR 600.310(f)(4)(i)). Furthermore, regulations specify that if an ACT is not used, management uncertainty should be accounted for in the ACL. Therefore, the Council may recommend and NMFS may implement ACLs that are equal to or less than the ABCs recommended for each species by the SSC. If the Council were to recommend ACLs that are equal to the ABCs, the Council should also recommend an ACT reflecting the results of the SEEM analysis to incorporate management uncertainty. If the Council does not recommend an ACT, the Council should recommend ACLs that reflect the results of the SEEM analysis and incorporate management uncertainty.

Table 7: Comparison of the ACLs as proposed under Alternatives 1 and 2a-c for the American Samoa bottomfish fishery for the 2024–2026 fishing years. All values are in lb.

ACL Alternatives	<i>A. rutilans</i>	<i>A. virescens</i>	<i>C. lugubris</i>	<i>E. coruscans</i>	<i>L. rubrioperculatus</i>	<i>L. kasmira</i>	<i>P. flavipinnis</i>	<i>P. zonatus</i>	<i>V. louti</i>
1 – No Action	5,000 (complex-level catch limit would apply to the total catch all eleven BMUS)								
2a – Aggregate ACL	52,888 (complex-level catch limit would apply to the total catch of the nine assessed BMUS)								
2b – 9 Single-Species ACLs	8,554	4,872	3,086	4,872	8,554	16,645	2,579	1,521	2,205
2c -Single-Species ACLs set lower than indicated by SEEM analysis (limit dependent on the amount of the reduction)	7,584-8,378	4,696-4,850	2,954-3,064	4,431-4,784	8,333-8,510	15,785-16,491	2,359-2,535	1,433-1,521	2,050-2,183

2.2 Features Common to All Alternatives

In American Samoa, the fishing year begins January 1 and ends on December 31. Each Alternative assumes that all other existing federal and local resource management laws and regulations will continue, described below, as will non-regulatory monitoring of catch by the American Samoa DMWR with assistance from the WPacFIN. These programs include boat-based and shore-based creel survey programs as described in Section 1.6.

No federal permit is required to fish for BMUS in American Samoa, and there is no federal reporting requirement. However, a commercial fishing license is required for all fishermen engaged in commercial fishing in the waters of American Samoa (ASAC § 24.0981). In addition to the license requirement, entities that sell seafood products are required to report sales on a monthly basis to the American Samoa DMWR (ASAC § 24.0906). DMWR reports commercial fishery sales information to NMFS through the WPacFIN system. Under all of the Alternatives, NMFS would work with WPacFIN and DMWR to encourage timely processing of data.

Coordinated management in Federal and territorial waters would improve the ability of management measures to maintain fishing at a designated catch limit. However, American Samoa does not currently have regulations in place to enforce catch limits on any species in territorial waters. For that reason, the following environmental and fishery outcome analyses of the Alternatives account for the actions that NMFS can take within its regulatory authority. A comparison of the ACLs proposed under the Alternatives is summarized in Table 7.

2.3 Description of the Alternatives

2.3.1 Alternative 1: No Action – Continue the rebuilding plan

Under Alternative 1, the Council would take no action, which would continue the current rebuilding plan and would not implement new ACLs or AMs for the bottomfish fishery in American Samoa for the 2024–2026 fishing years. This Alternative does not consider the new information provided by the 2023 benchmark stock assessment, and therefore, does not comply with NS-2 where management decisions should be based on BSIA. This Alternative reflects the recent fishery status quo, which provides a baseline for NMFS to consider the potential fishery outcomes and environmental effects of other Alternatives.

Expected Fishery Outcome

Under this Alternative, the fishery would continue to operate under the rebuilding plan with a catch limit of 5,000 lb. If NMFS projects the ACL will be reached during a fishing year, NMFS will close the fishery in Federal waters through the end of the fishing year. After the fishery is closed, fishing for and possession of American Samoa BMUS in Federal waters is prohibited and the sale, offering for sale, and purchase of any American Samoa BMUS from Federal waters would be prohibited. As a post-season AM, if the catch limit is exceeded the fishery would be closed in Federal waters until a coordinated approach to management in territorial waters is developed.

Following the announcement that the American Samoa bottomfish fishery was declared overfished and overfishing was occurring in 2020, the catch declined from 7,697 lb in 2020 to

2,063 lb in 2021. Effort also declined from 15 trips in 2020 to seven trips in 2021 (Table 8). Fishing effort and catch increased slightly in 2022 to an estimated 2,583 lb., but did not return to the levels seen prior to the overfished and overfishing determination. If the rebuilding plan were to continue, it is expected that the fishery would operate similarly to the fishery in 2022. In 2022, the fishery took 9 trips and was projected to have caught 2,583 lb of BMUS.

Table 8: Comparison of bottomfish catches to number of trips between 2012 and 2022. Trips include those that used bottomfish, trolling, and/or spearfishing gear. Source WPRFMC 2023a

Year	Catch	Trips
2012	3,648	9
2013	11,070	15
2014	16,260	23
2015	27,722	25
2016	24,819	27
2017	17,425	21
2018	12,811	17
2019	11,399	11
2020	7,697	15
2021	2,063	7
2022	2,583	9

2.3.2 Alternative 2: Discontinue the rebuilding plan

Under Alternative 2, the Council would recommend to discontinue the American Samoa bottomfish rebuilding plan and amend the FEP (NMFS 2022). The Council would further recommend AMs and ACLs for the 2024–2026 fishing years. For all Alternatives under Alternative 2 (Alternatives 2a through 2c), the Council would recommend as an AM that if the average catch over the most recent three years exceeds the ACL, the ACL would be reduced by the amount of the overage in the subsequent year.

This Alternative would utilize the results of the 2023 bottomfish stock assessment that found the fishery was neither experiencing overfishing nor overfished in 2017 or any subsequent year. At its 148th meeting, the SSC agreed that this assessment was BSIA. On August 23, 2023, the Council received the BSIA and stock status determination memoranda from NMFS concluding the fishery was not overfished from 2017 through 2021 and provided justification for the Council to discontinue Amendment 5 to the American Samoa FEP.

2.3.3 Accountability measures common to all Alternatives subsequent to Alternative 2

In accordance with 50 CFR 665.4, when NMFS projects that catches will reach an ACL for any stock or stock complex, the agency must restrict fishing for that stock or stock complex in the applicable U.S. EEZ to prevent catches from exceeding the ACL. The restriction may include, but is not limited to, closing the fishery, closing specific areas, or restricting effort (76 FR 37286, June 27, 2011). However, the Council and its SSC discussed the difficulty in implementing in-season AMs in the bottomfish fishery because real-time, in-season monitoring is not always

available. Due to the limited number of interviews and amount data collected by the creel survey, PIFSC does not received a statistically reliable amount of data to perform catch expansions until late in the fishing year, at which point the ACL may already be exceeded (see Section 1.6 for more details). Furthermore, NMFS implemented an in-season AM when the rebuilding plan was implemented in 2021. However, in 2022, catch expansions were not available until October, two months before the fishing year ended. Had the data indicated the fishery was approaching or had exceeded the ACL at this time; NMFS was not likely to have been able to implement in-season AMs prior to the fishery exceeding the ACL. For these reasons, only post-season AMs are practicable in the American Samoa bottomfish fishery.

Alternatives 2a through 2c would therefore implement a post-season AM. After the end of each fishing year, if NMFS and the Council determine that the average catch from the most recent three-year period exceeds the ACL; NMFS would reduce the ACL in the subsequent year by the amount of the overage. As an additional performance measure specified in the FEP, if catches exceed the ACL more than once in a four-year period, the Council must re-evaluate the ACL process, and adjust the system, as necessary, to improve its performance and effectiveness.

2.3.3.1 *Alternative 2a: Implement an aggregate ACL of 52,888 lb and a post-season AM for fishing years 2024–2026 (Council Preliminarily Preferred Alternative)*

Under Alternative 2a, the Council would recommend that NMFS implement an aggregate ACL for the nine American Samoa BMUS that were assessed in the 2023 stock assessment based on the catch limits derived from their P* and SEEM analyses. The probability of overfishing tables from the stock assessment (Table 4 and Table 5) would be used to calculate single-species ACLs, and those numbers would be summed to produce the aggregate. However, the 2023 stock assessment estimates probability of overfishing on an individual species basis, and thus the probability of overfishing for the nine BMUS in aggregate is unknown.

In the 2023 benchmark stock assessment, the catch projections for single-species OFLs are 10,009 lb for *A. rutilans*, 5,115 lb for *A. virescens*, 3,219 lb for *C. lugubris*, 5,445 lb for *E. coruscans*, 8,863 for *L. rubrioperculatus*, 17,637 for *L. kasmira*, 2,844 lb for *P. flavipinnis*, 1,609 lb for *P. zonatus*, and 2,425 lb for *V. louti*. The sum of the OFL for the nine assessed species would be 57,166 lb, which is more than the previous OFL estimate in the 2019 stock assessment (Langseth et al. (2019) at 8,000 lb. While this comparison may provide some general perspective on the state of the fishery as described in the 2023 stock assessment, the structure of the single-species models is fundamentally different from the surplus production model of the 2019 stock assessment that would have to be used to estimate an MSY for a multi-species complex.

Under this Alternative, the SEEM analysis for each species would be used to set an aggregate ACL by summing the ACLs for each species, as indicated by the results of the SEEM analysis. This would result in an aggregate ACL of 52,888 lb for the BMUS stock complex. However, this number does not account for *E. carbunculus* and *P. filamentosus*, as they were not assessed in the 2023 benchmark stock assessment.

Using the information from the 2023 stock assessment to create combined or aggregate metrics and catch limits under this Alternative does not conform to NS-2 because it does not use BSIA

for management in an appropriate manner. Furthermore, this Alternative also does not conform to the requirements under NS-1, in that the ACL exceeds the ABCs set by the SSC and it does not prevent the overfishing of the individual bottomfish species. In consideration of this, the Council did not choose to recommend this Alternative at Final Action, despite preferring it during initial action.

Expected Fishery Outcome

Under Alternative 2a, the fishery could catch up to 52,888 lb of bottomfish, which is more than ten times higher than the ACL under the rebuilding plan but less than half of the ACL for fishing year 2017. However, the fishery is not likely to reach the ACL of 52,888 lb if the fishery performance is similar to fishery performance over the past 10 years. The average annual BMUS catch (for all eleven species) from 2020–2022 was 4,114 lb (Table 2), and 10,717 lb from 2012–2022 (Table 2). Even if the fishery performs close to the highest recent catch of 33,307 lb during the 2015 fishing year, the fishery would continue with no overage adjustment for the complex. If the three-year average catch of BMUS in the fishery were to exceed the 52,888 lb aggregate ACL, NMFS would reduce the ACL in the next fishing year by the amount of the overage.

On a single-species level, the bottomfish fishery exceeded the 2024–2026 single-species OFL (5,115 lb) for *A. virescens* in 2015 and 2016, the ABC (5,027 lb) for *E. coruscans* in 2014 and 2016, and the OFL (5,445 lb) for *E. coruscans* in 2016 (Table 9). An aggregate ACL, and associated AMs, for 2024 to 2026 would neither prevent such single-species overages of the OFL or ABC from occurring, nor enable the implementation of AMs to mitigate overages that do occur. If the fishery were to perform similar to the 2014 through 2016 years, this Alternative would not prevent overfishing and would not comply with NS-1.

Table 9: American Samoa BMUS catch from 2012 – 2021. All catch values are in lb. Source: Nadon et al. 2023

Year	<i>A. rutilans</i>	<i>A. virescens</i>	<i>C. lugubris</i>	<i>E. coruscans</i>	<i>L. rubrioperculatus</i>	<i>L. kasmira</i>	<i>P. flavipinnis</i>	<i>P. zonatus</i>	<i>V. louti</i>
2012	1,171	1,021	562	1,129	2,500	1,168	631	71	172
2013	2,950	4,145	970	2,800	4,877	3,635	606	161	761
2014	3,596	4,839	604	5,088	2,341	3,982	644	280	646
2015	4,068	5,628	1,246	4,239	6,773	4,076	1,221	243	353
2016	3,148	6,598	1,676	6,748	1,929	1,243	1,323	571	139
2017	3,450	4,213	1,488	3,338	1,360	798	205	540	121
2018	1,989	2,086	1,396	3,351	888	520	355	280	143
2019	2,743	2,756	1,272	1,376	1,790	754	254	159	410
2020	527	2,932	745	1,396	959	582	165	110	247
2021	75	271	82	344	421	377	24	13	31
3-yr avg. (2019-2021)	1,115	1,986	700	1,038	1,057	571	148	94	229
10-yr avg. (2012-2021)	2,372	3,449	1,004	2,981	2,384	1,714	543	243	302

2.3.3.2 *Alternative 2b: Implement nine single-species ACLs and post-season AMs for fishing years 2024–2026 based on the results of the P* and SEEM analyses*

Under Alternative 2b, the Council would implement single-species ACLs for the nine assessed American Samoa BMUS based on their respective P* and SEEM analyses for 2024–2026 (Table 10), and establish *E. coruscans* as an indicator species for *E. carbunculus* and *P. flavipinnis* as an indicator species for *P. filamentosus*. Separate ACLs and AMs would not be implemented for *E. carbunculus* and *P. filamentosus*. Instead, they would be subject to the post-season AM based on monitoring of catch of the indicator species. While catch of these data poor species will be monitored and they would be subject to the post-season AM based on the catch monitoring of their respective indicator species (per 50 CFR 600.310(d)(2)(ii)(A)), their catch is not tracked against the limit of their indicator species. The probability of overfishing tables (Table 4 and Table 5) would be used to set the ACLs. The ACLs would be set lower than the ABCs and incorporate management uncertainty in accordance with the SEEM scores.

Table 10: Single-species ABCs and ACLs for the nine assessed BMUS, as indicated by the P* and SEEM analyses.

BMUS	Samoan name	OFL (lb)	P* for ABC	ABC (lb)	SEEM Score	P* for ACL	Proposed ACL (lb)
<i>A. rutilans</i>	Palu-gutusiliva	10,009	39	8,951	4	35	8,554
<i>A. virescens</i>	Asoama	5,115	40	4,960	4	36	4,872
<i>C. lugubris</i>	Taufauli	3,219	41	3,131	4	37	3,086
<i>E. coruscans</i>	Palu-loa	5,445	39	5,027	4	35	4,872
<i>L. rubrioperculatus</i>	Filopaomumu	8,863	41	8,642	4	37	8,554
<i>L. kasmira</i>	Savane	17,637	42	16,976	4	38	16,645
<i>P. flavipinnis</i>	Palu-sina	2,844	40	2,668	4	36	2,579
<i>P. zonatus</i>	Palu-ula	1,609	40	1,565	4	36	1,521
<i>V. louti</i>	Velo	2,425	40	2,271	4	36	2,205

Expected Fishery Outcome

The fishery is currently operating under a 5,000 lb limit for all 11 BMUS under the rebuilding plan, and the ACLs set under Alternative 2b would increase the total allowable landings in the bottomfish fishery over the current rebuilding plan. Under Alternative 2b, catch would be monitored against the ACL on a single-species level. When the Council was notified that the bottomfish fishery was overfished and experiencing overfishing in 2019, the bottomfish catch decreased from 11,514 lb in 2019 to 1,638 lb in 2021 (Nadon et al. 2023). Table 11 shows the average annual catch for each of the 9 assessed BMUS species for fishing years 2019–2021, the three most recent years in the 2023 stock assessment, in comparison to the proposed ACLs. No species exceeded an average catch that was greater than 41 percent of its proposed ACL under Alternative 2b during these years. Average catch of *A. virescens* in 2019–2021 was the closest to the proposed ACL, at 41 percent of the proposed ACL, followed by *C. lugubris* and *E. coruscans* at 26 percent and 22 percent, respectively. In addition, between 2017 through 2021, the fishery

did not exceed any of the OFL values for the nine assessed species and participation in the fishery steadily declined.

The catch of *A. virescens* did exceed the proposed ACL (4,872 lb) in 2014 through 2016 and the catch of *E. coruscans* exceeded the proposed ACL (4,872 lb) in 2014 and 2016 (Table 10). The three-year average catch for each of these species would also have exceeded the proposed ACL for *A. virescens* in 2016 and 2017 and the proposed ACL for *E. coruscans* in 2016. If the fishery were to continue to operate as it has in recent years (i.e. 2017–2021), it is anticipated that the fishery would not exceed the proposed ACLs and the community would continue to be able to access the socioeconomic and cultural benefits of the fishery.

Table 11: Average BMUS catch in fishing years 2019–2021 for the 9 assessed BMUS compared to the proposed ACLs under Alternative 2b.

Species	Average catch (lb) 2019-2021	Proposed ACL (lb)	Percent of Proposed ACL
<i>A. rutilans</i>	1,115	8,554	13
<i>A. virescens</i>	1,986	4,872	41
<i>C. lugubris</i>	700	3,086	23
<i>E. coruscans</i>	1,038	4,872	21
<i>L. rubrioperculatus</i>	1,057	8,554	12
<i>L. kasmira</i>	571	16,645	3
<i>P. flavipinnis</i>	148	2,579	6
<i>P. zonatus</i>	94	1,521	6
<i>V. louti</i>	229	2,205	10

2.3.3.3 Alternative 2c: Implement nine single-species ACLs lower than the results of the P* and SEEM analyses for fishing years 2024–2026

Under Alternative 2c, the Council and NMFS would implement ACLs for 2024 to 2026 for the nine American Samoa BMUS that were assessed in the 2023 stock assessment at catch levels that are lower than the ACLs indicated by the results of each species P* and SEEM analyses. Catch limit options under this Alternative are 2-10 percent lower than the ACLs indicated by the results of each species’ P* and SEEM analyses. They are presented here for consideration and analysis of more conservative options (Table 12). As with Alternative 2b, under Alternative 2c the Council would establish *E. coruscans* as an indicator species for *E. carbunculus* and *P. flavipinnis* as an indicator species for *P. filamentosus*. Separate ACLs and AMs would not be implemented for *E. carbunculus* and *P. filamentosus*. The probability of overfishing tables (Table 4 and Table 5) would be used to set the ACLs. This Alternative provides a more precautionary approach to account for scientific or management uncertainties not identified in the P* and SEEM analyses.

Table 12: Possible ACLs based on percent reductions from the probability of overfishing as determined by the P* and SEEM analyses for each species. ACLs are expressed in lb. The numbers in parentheses represent the probability of overfishing, or P*.

BMUS	Samoan name	ACL at P*	ACL at P*-2%	ACL at P*- 5%	ACL at P*-8%	ACL at P*- 10%
<i>A. rutilans</i>	Palu-gutusaliva	8,554 (35)	8,378 (33)	8,069 (30)	7,782 (27)	7,584 (25)
<i>A. virescens</i>	Asoama	4,872 (36)	4,850 (34)	4,784(31)	4,740 (28)	4,696 (26)
<i>C. lugubris</i>	Taufauli	3,086 (37)	3,064 (35)	3,020 (32)	2,976 (29)	2,954 (27)
<i>E. coruscans</i>	Palu-loa	4,872 (35)	4,784 (33)	4,652 (30)	4,519 (27)	4,431 (25)
<i>L. rubrioperculatus</i>	Filopaomumu	8,554 (37)	8,510 (35)	8,444 (32)	8,378 (29)	8,333 (27)
<i>L. kasmira</i>	Savane	16,645 (38)	16,491(36)	16,226 (33)	15,961 (30)	15,785(28)
<i>P. flavipinnis</i>	Palu-sina	2,579 (36)	2,535 (34)	2,469 (31)	2,403 (28)	2,359 (26)
<i>P. zonatus</i>	Palu-ula	1,521 (36)	1,521 (34)	1,477 (31)	1,455 (28)	1,433 (26)
<i>V. louti</i>	Velo	2,205 (36)	2,183 (34)	2,138 (31)	2,072 (28)	2,050 (26)

Expected Fishery Outcome

The fishery is currently operating under a 5,000 lb limit for all 11 BMUS under the rebuilding plan, and the ACLs set under Alternative 2c would increase the total allowable landings in the bottomfish fishery over the current rebuilding plan. The sum of the proposed ACLs, if the risk of overfishing were to be set 2 percent lower than that indicated by the SEEM analysis, would equate to a total of 52,305 lb of total potential catch for the 9 assessed BMUS species, and a total of 49,625 lb if the risk of overfishing were to be set 10 percent lower. Under Alternative 2c, catch would be monitored against the ACLs on a single-species level.

Table 11 shows the average catch annual for each of the nine assessed BMUS species for fishing years 2019–2021, the three most recent years in the stock assessment. During this time period, no species exceeded an average catch that was greater than 42 percent of its proposed ACL under this alternative, if ACLs were set at a catch level that incurs a risk of overfishing that is 10 percent less than indicated by the SEEM analysis. In addition, between 2017 through 2021, the fishery did not exceed any of the OFL values for the nine assessed species and participation in the fishery steadily declined.

Under Alternative 2c, the allowable catch would be depend on the ACL selected by the Council at Final Action, but the sum of the ACLs for each of the nine assessed species would be greater than the current 5,000 lb limit under the rebuilding plan. If the fishery were to continue to operate as it has in recent years, NMFS anticipates that the fishery would not exceed the proposed ACLs and the community would continue to be able to access the socioeconomic and cultural benefits of the fishery.

Compared to Alternative 2b, this Alternative is a more conservative approach to setting catch limits and would lower the allowable amount of catch available to the fishing community for each of the BMUS, thus lowering potential revenue, subsistence benefits of the fishery, and amount of fish available for cultural practices.

2.3.3.4 *Alternatives Considered, but not included for further analysis*

Implement In-Season AMs

Fishery managers cannot process catch information in near-real time in the American Samoa bottomfish fisheries, and annual fishery statistics do not become available until up to six months after local agencies collect the data. Under the American Samoa bottomfish rebuilding plan, in-season monitoring during the fishing year is used to implement an AM that would close the fishery in Federal waters for the remainder of the year if the fishery is projected to attain or exceed the ACL. However, in-season monitoring is limited by the availability of creel surveys and, due to low effort in the fishery, a statistically viable dataset cannot be produced from creel surveys until late in the fishing year. For example, in 2022, there was not a sufficient amount of data to conduct catch expansion analyses until the third quarter of the fishing year (October 2022). Had the data indicated the fishery was approaching or had exceeded the ACL at this time; NMFS was not likely to have been able to implement in-season AMs prior to the fishery exceeding the ACL. Therefore, the Council did not recommend in-season AMs for Alternatives 2a, 2b and 2c to prevent an ACL from being exceeded (e.g., fishery closures in Federal waters) for the American Samoa bottomfish fishery.

Implement a Post-Season AM in which the annual overage amount is deducted from the ACL in the subsequent year

At its 196th meeting, the Council considered a post-season, single year overage adjustment if landings of bottomfish exceed the ACL in a given fishing year, but did not include this option for further analysis. The creel survey data is considered BSIA by NMFS; however, a low number of interviews in recent years has increased the uncertainty in the catch expansion estimates. This may result in high fluctuations in catch estimates from year to year, which could result in frequent overage adjustments. This level of fluctuation would create unnecessary uncertainty for fishermen in the amount of allowable catch from year to year, and may not accurately reflect the actual catch on short time scales due to uncertainty in the catch expansion estimate. By contrast, using an AM that evaluates a three-year average catch against the ACL would provide a more robust estimate and would mitigate high yearly fluctuations.

3 Description of the Affected Environment

This section describes the baseline condition of resources in the action area under recent fishery conditions. This section also describes the socioeconomic and management setting, as well as resources eliminated from detailed analysis. NMFS and the Council derive the information in this section primarily from the [2022 American Samoa Archipelago FEP Stock Assessment and Fishery Ecosystem \(SAFE\) Report](#) (WPRFMC 2023a), the [FEP](#) (WPRFMC, 2009, as amended), the [NMFS species directory](#), the [NMFS Stock SMART](#) webpage (summaries of the NMFS approved stock assessment reports), and other available information cited below.

3.1 Target and Non-Target Stocks

BMUS managed under the FEP include several species of emperors, snappers, groupers, and jacks (Table 1). Recent catch levels since 2012 are described in Table 9. These and other catch statistics for the American Samoa bottomfish fishery can be found in the [2022 SAFE report](#). For a comprehensive discussion of the biology, life history, factors that affect distribution and abundance of BMUS, and other information, see the [FEP](#) (WPRFMC 2009) or search the [NMFS species directory](#) for a summary of species-specific information (<https://www.fisheries.noaa.gov/species-directory>). Recent target and non-target catch data for the American Samoa bottomfish fishery is available in the [2022 SAFE Report](#), along with a detailed summary of the environment affected by this action.

The Magnuson-Stevens Act defines bycatch as finfish, mollusks, crustaceans, and all other forms of marine animal and plant life (other than marine mammals and seabirds) that are harvested in a fishery that are not sold or kept for personal use. Bycatch can be further described as either economic or regulatory discards. Economic discards are fish that are discarded because they are of undesirable size, sex, or quality, while regulatory discards are fish that are discarded because regulations do not allow fishermen to retain the fish. Discards in American Samoa usually occur due to regulatory requirements, cultural reasons, ciguatera poisoning, or shark depredation.

3.1.1 Status of the BMUS in the American Samoa bottomfish fishery

NMFS determines stock status of MUS using the SDC for overfishing and overfished conditions described in detail in the FEP (WPRFMC 2009). The 2023 stock assessment determined that the no species in the fishery is overfished or experiencing overfishing (Nadon et al 2023). Definitions of overfishing and overfished are explained in Section 1.7 of this EA.

For summary information on individual stock assessment results, as reported to the NOAA Fisheries Office of Science and Technology through the SIS, see the [Stock SMART webpage](#) and browse by stock. This information is based on BSIA but does not represent all aspects of each individual stock assessment, status, or management situation. For the full final stock assessment report for each species see the downloadable .pdf under “Final Assessment Report” on the same webpage. More information on the status, life history, biology, and management for each species can be found by searching the NMFS species directory.

3.1.2 Summary of American Samoa BMUS Catch Statistics

BMUS catch and effort information can be found in Sections 1.5 through 1.7 of the [2022 SAFE report](#) (WPRFMC 2023a). The number of bottomfishing and mixed bottomfishing-trolling vessels has been declining since 2015. BMUS landings have closely tracked landings for all bottomfish and account for 40 percent of the total bottomfish landings. Generally, there is little bycatch in bottomfishing, whether BMUS or non-BMUS, because most fish are retained for consumption or sale.

3.2 Protected Resources

There are several protected species known to occur in the waters around American Samoa, and thus, there exists potential for the American Samoa bottomfish fishery to interact with these protected species. NMFS has evaluated potential impacts on protected species by the American Samoa bottomfish fishery such that they can be managed in compliance with the Magnuson-Stevens Act, the Marine Mammal Protection Act (MMPA), the Endangered Species Act (ESA), and other laws as applicable. More detailed descriptions of protected species around American Samoa are available in Section 3.3.4 of the [FEP](#) (WPRFMC 2009) and online on the NMFS [species directory website](#).

Bottomfish fisheries in American Samoa have not had reported interactions with protect species, and no specific regulations are in place to mitigate protected species interactions. Destructive gear such as bottom trawls, bottom gillnets, explosives and poisons are prohibited under the FEP, and these prohibitions benefit protected species by preventing potential interactions with non-selective fishing gear.

3.2.1 Species Protected under the Endangered Species Act

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

This section summarizes much of the information contained in the following current BiOps to describe baseline conditions. NMFS previously evaluated the potential impacts of the fishery on all ESA-listed species under NMFS jurisdiction, and any relevant designated critical habitat, and documented its determinations in the following list of BiOps under which the American Samoa bottomfish fishery currently operates.

Table 13: ESA-listed species and their determinations under the relevant ESA consultations for the American Samoa bottomfish fishery. See Appendix A of the NMFS 2022 biological opinion on the bottomfish fishery of American Samoa (2022a) for the consultation history by ESA-listed species that occur in the area of operation for the fishery.

Consultation	Species	Determination
NMFS 2002	Loggerhead sea turtle, Leatherback sea turtle, Olive ridley sea turtle, Green sea turtle, Hawksbill sea turtle, Blue whale, Fin whale, Sei whale, Sperm whale, Northern right whale	Not likely to adversely affect
NMFS 2015	Scalloped hammerhead sharks and five coral species with no common name (<i>Acropora globiceps</i> , <i>A. retusa</i> , <i>A. speciosa</i> , <i>Euphyllia paradivisa</i> , <i>Isopora crateriformis</i>)	Not likely to adversely affect
NMFS 2022a	Giant manta ray, Chambered nautilus, Oceanic Whitetip shark	Not likely to adversely affect

These documents can be found by clicking on the hyperlink, by searching the following [website](#), or by contacting NMFS using the contact information at the beginning of the document.

3.2.1.1 *Sea Turtles*

All sea turtles are subject to protection under the ESA in American Samoa. Direct harvest, direct harm, and indirect harm are prohibited unless the ESA section 9 prohibition on take is otherwise exempted. In the United States, NMFS and the USFWS have joint jurisdiction for the recovery and conservation of ESA-listed threatened and endangered sea turtles. NMFS has jurisdiction over sea turtles in the marine environment, while the USFWS has jurisdiction of these species in the terrestrial environment (e.g. nesting beaches). NMFS has coordinated the continued authorization of the American Samoa bottomfish fishery under Section 7 of the ESA. All six sea turtle species occurring in U.S. waters are listed under the ESA. The range of five of these species overlaps with the EEZ around American Samoa, and they may be encountered by fishermen. Territorial regulations prohibit the take, possession, and sale of green, hawksbill, and leatherback sea turtles (ASCA § 24.0959). Table 15 lists the sea turtle species reasonably likely to occur around American Samoa. On July 19, 2023 the USFWS proposed to designate critical habitat for six distinct population segments (DPSs) of the green sea turtle, including critical habitat area which occurs in American Samoa (88 FR 46376). However, the proposed critical habitat is terrestrial, and does not overlap with the areas of operation for the bottomfish fishery, including shore-based fishing activities.

Sea turtles currently face many threats, including (1) direct harvest of animals and eggs or predation; (2) incidental interactions with fisheries; (3) collisions with vessels and automobiles; (4) urban development / loss of habitat; (5) pollution (e.g., plastics); and (6) climate change. Sea turtle conservation initiatives are in place, including restoration of habitats, laws to protect

turtles, and management of threats to help provide for recovery. More information on the conservation of sea turtles is available on the [NMFS website](#).

Table 14. ESA-listed sea turtles known to occur or reasonably expected to occur in waters around the American Samoa Archipelago.

Common names/ DPS if applicable	Scientific Name	ESA listing status in American Samoa	Occurrence in American Samoa	Interactions with the American Samoa bottomfish fishery through 2019
Green sea turtle (laumei enaena and fonu) Central South Pacific DPS	<i>Chelonia mydas</i>	Endangered DPS	Frequently seen. Nest at Rose Atoll. Known to migrate to feeding grounds.	No interactions observed or reported.
Hawksbill sea turtle (laumei uga)	<i>Eretmochelys imbricata</i>	Endangered	Frequently seen. Nest at Rose Atoll and Swain's Island.	No interactions observed or reported.
Leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered	Very rare in American Samoa. One recovered dead in experimental longline fishing.	No interactions observed or reported.
Olive ridley sea turtle	<i>Lepidochelys olivacea</i>	Threatened	Uncommon in American Samoa. Three sightings.	No interactions observed or reported.
Loggerhead sea turtle South Pacific DPS	<i>Caretta caretta</i>	Endangered DPS	American Samoa is within the species nesting range, but the species has not been observed in the territory.	No interactions observed or reported.

Both commercial and non-commercial fisheries have the potential to cause adverse effects to sea turtles, including injuries and mortalities that occur incidental to fishing, such as fishing gear or vessel interactions. The most likely impacts of the bottomfish fishery in American Samoa on sea turtles is the potential for vessel collisions causing injuries and mortalities. The frequency of this type of effect is unknown in American Samoa. However, given the limited number of bottomfish fishing vessels in American Samoa (seven recorded vessels; WPRFMC 2021), and the fact that bottomfish fishing occurs while either at anchor or slowly drifting over fishing grounds, sea turtle collisions with vessels in this fishery are rare. As Table 15 indicates, no records exist of interactions between the American Samoa bottomfish fishery and sea turtles.

3.2.1.2 *Sharks and Rays*

Scalloped hammerhead shark

On July 3, 2014, NMFS listed the Indo-West Pacific scalloped hammerhead shark distinct population segment (DPS) under the ESA (79 FR 38213). The Indo-West Pacific scalloped hammerhead shark DPS occurs in all U.S. Pacific Island territories. Scalloped hammerhead sharks range widely from nearshore to pelagic environments and from the surface to 500 m (1,640 ft) deep.

As noted in the final rule (79 FR 38213, July 3, 2014), the significant operative threats to the listed scalloped hammerhead DPSs are overutilization by foreign industrial, commercial, and artisanal fisheries and inadequate regulatory mechanisms in foreign nations to protect these sharks from the heavy fishing pressure and related mortality, with illegal fishing identified as a significant problem in areas outside of U.S. jurisdiction. In other parts of the Pacific, some fishermen target sharks, including the scalloped hammerhead, to harvest their fins. Incidental capture in fisheries also contributes to increased mortality in this species (79 FR 38213, July 3, 2014).

Conservation initiatives for scalloped hammerhead sharks are in place and include, in addition to the federal prohibition on retention of the scalloped hammerhead DPS, territorial prohibitions on the retention or transport of any sharks. The territorial government passed a law in 2012 (ASAC § 24.0961) stating that no person shall:

- (1) Possess, deliver, carry, transport or ship by any means whatsoever any shark species or the body parts of any such species;
- (2) Import, export, sell or offer for sale any such species or body parts of such species; or
- (3) Take or kill any such species in American Samoa.

Oceanic whitetip shark

On January 30, 2018, NMFS issued a final rule to list the oceanic whitetip shark as threatened under the ESA (83 FR 4153). The oceanic whitetip shark is found in tropical and subtropical seas between 30° N. and 35° S. latitudes worldwide. The oceanic whitetip shark experiences high encounter and mortality rates in some commercial fisheries (e.g., pelagic longline, purse seine, and gillnet fisheries) throughout its range because of its tropical distribution and tendency to remain in surface waters (NMFS 2019).

As noted in the final rule, the greatest threat to the oceanic whitetip shark is overutilization from fishing pressure and inadequate regulatory mechanisms to protect the species. However, American Samoa has territorial conservation measures that prohibit retention or transport of any shark (ASAC § 24.0961). The best available information to estimate interactions with oceanic white tip sharks are boat-based creel surveys, and review of 33 years of creel survey data did not find evidence of interactions with oceanic whitetip sharks and the American Samoa bottomfish fishery (NMFS 2019). On August 8, 2022, NMFS determined that the continued operation of the bottomfish fishery in American Samoa is not likely to adversely affect the oceanic whitetip shark (NMFS 2022a). Finally, on May 14, 2024 NMFS published a proposed rule to apply the prohibitions listed under ESA section 9(a)(1)(A) through (G). This proposed rule would prohibit

the take of oceanic whitetip shark within the United States, territorial seas of the United States or on the high seas by any person subject to the jurisdiction of the United States; import and export of oceanic whitetip shark; as well as the possession, sale and transport of oceanic whitetip shark that are taken illegally or that are entered into interstate or foreign commerce.

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. It is commonly found offshore, in oceanic waters, and near productive coastlines. As noted in the final rule (83 FR 2916, January 22, 2018), the giant manta ray appears to be most at risk of overutilization in the Indo-Pacific and eastern Pacific portions of its range. Targeted fishing and incidental capture of the species in Indonesia, Philippines, Sri Lanka, India, and throughout the eastern Pacific, has led to observed declines in populations.

There are no targeted giant manta ray fisheries in American Samoa. Manta rays are filter feeders who forage near the surface and do not interact with bottomfish fishing gear (Miller and Klimovich 2016). The rate at which the American Samoa bottomfish fishery interacts with giant manta rays in other ways is unknown; however, there are no reported or observed collisions with giant manta rays and bottomfish fishing vessels in any island area. On August 8, 2022, NMFS determined that the continued operation of the bottomfish fishery in American Samoa is not likely to adversely affect the giant manta ray (NMFS 2022a).

3.2.1.3 *Chambered Nautilus*

On September 28, 2018, NMFS issued a final rule to list the chambered nautilus as threatened under the ESA (83 FR 48976). The chambered nautilus is found in tropical, coastal reef, deep-water habitats native to tropical reef habitats of the Indo-Pacific, and its known range includes waters off American Samoa. As noted in the final rule (83 FR 48976, September 28, 2018), the most significant threat to the chambered nautilus is overutilization through commercial harvest to meet the demand for the international nautilus shell trade. Targeted fishing of, and trade in, the species is thought to primarily occur in Philippines, Indonesia, India, and China, despite prohibitions (Miller 2018). Commercial harvest of the species is also thought to occur in Papua New Guinea, East Asia, Thailand, Vanuatu, and Vietnam (Miller 2018).

There is no known local utilization or commercial harvest of chambered nautilus in American Samoa (CITES 2016). Additionally, there are no records of any interaction between the American Samoa bottomfish fishery and chambered nautilus, and it is highly unlikely that they would be caught while bottomfish fishing. Research suggests that chambered nautilus may be strict or obligate bottom-dwelling scavengers (Barord 2015; Barord et al. 2014; Miller 2018). Further, chambered nautilus have an estimated average swimming speed of 0.10 m/s (Barord et al. 2014). To catch them, targeted fisheries use traps that are deployed for several hours or left overnight (Freitas and Krishnasamy 2016). Given the limited mobility and feeding behavior of the species, they would not be able to approach and take bait in the short time it is deployed by hook and line while bottomfish fishing.

On August 8, 2022, NMFS determined that the continued operation of the bottomfish fishery in American Samoa is not likely to adversely affect the chambered nautilus (NMFS 2022a).

3.2.1.4 *Corals*

On November 29, 2023, NMFS proposed to designate critical habitat for five Indo-Pacific corals listed as threatened under the ESA within U.S. waters around Guam, CNMI, the Pacific Remote Island Area (PRIA), and American Samoa (88 FR 83644). All five species are located in waters around American Samoa including *Acropora globiceps*, *A. retusa*, *A. speciosa*, *Euphyllia paradivisa*, and *Isopora crateriformis*. Proposed coral designated critical habitat consists of the essential feature of substrate and water column habitat characteristics essential for the reproduction, recruitment, growth, and maturation of the listed corals.

Proposed critical habitat consists of 17 separate units, each of which contains between one and five ESA-listed corals that occur there. There are four units in American Samoa (Tutuila, Ofu-Olosega, Ta'u, and Rose Atoll) extending 1-6 nm from shore. In a Biological Evaluation dated March 13, 2015, NMFS determined that the fisheries of American Samoa may affect, but are not likely to adversely affect the listed coral species. No critical habitat was designated at this time, but it was determined that 97 percent of potential habitat for the ESA-listed corals in American Samoa was within Territorial waters (0-3 nm). Bottomfish fishing is not known to adversely affect habitat. Similar methods are used to fish for bottomfish in American Samoa and Hawai'i, and studies of bottomfish habitat in Hawai'i have not found adverse impacts to habitat from bottomfish fishing activities (Kelley and Moffit 2004; Kelley and Ikehara 2006). Furthermore, there is a small area of overlap between the bottomfish fishery and potential coral habitat, based on the depth range of coral habitat and the preferred fishing depths and locations of the fishery. NMFS has not yet made a final determination on the listing. If the proposal were finalized, NMFS would re-initiate consultation under Section 7 of the ESA to determine the impact of fishing activities on critical habitat and evaluate the need for any new management measures.

3.2.1.5 *Giant Clams*

NMFS is currently conducting a status review of seven species of giant clam to determine if these species warrant listing under the ESA. Four of these species have historical ranges that overlap with American Samoa, including *Hippopus hippopus*, *Tridacna derasa*, *T. gigas*, and *T. squamosa*. However, *T. squamosa* is the only species which currently occurs naturally in American Samoa waters. Similar to corals, bottomfish fishing likely has limited overlap with giant clam depth range and would be unlikely to affect the species or their habitat. If NMFS lists giant clam species as threatened or endangered, we would initiate consultation under Section 7 of the ESA to determine the impact of fishing activities on listed species and evaluate the need for any new management measures.

3.2.2 **Species Protected under the Marine Mammal Protection Act**

All species of marine mammals are protected under the Marine Mammal Protection Act (MMPA). In addition to the five ESA listed marine mammals, there are several other marine mammal species that occur in waters around American Samoa (Table 16). 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 of Commerce to protect and conserve all cetaceans (whales, dolphins, and porpoises) and pinnipeds (seals and sea lions, except walruses). The MMPA requires NMFS to prepare and periodically review marine mammal stock assessments. See 16 U.S.C. § 1361, et seq. Territorial regulations also prohibit the take, possession, and sale any marine mammal (ASCA § 24.0960).

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

According to the 2024 LOF (89 FR 12257, February 16, 2024), the American Samoa bottomfish fishery is a Category III fishery. A Category III fishery is one with a low likelihood or no known incidental takings of marine mammals. This fishery is expected to have a remote likelihood of marine mammal interactions. Additionally, no mortality or serious injury of marine mammals has been reported or documented in the fishery. No interactions have been observed or reported between these species and the American Samoa bottomfish fishery.

Table 15. Marine mammals known to occur or reasonably expected to occur in waters around American Samoa.

Common Name	Scientific Name	Interactions with the Fishery
Humpback whale* (tafolā or ia manu)	<i>Megaptera novaeangliae</i>	No interactions observed or reported.
Sperm whale*	<i>Physeter macrocephalus</i>	No interactions observed or reported.
Blue whale*	<i>Balaenoptera musculus</i>	No interactions observed or reported.
Fin Whale*	<i>Balaenoptera physalus</i>	No interactions observed or reported.
Sei whale*	<i>Balaenoptera borealis</i>	No interactions observed or reported.
Blainville’s beaked whale	<i>Mesoplodon densirostris</i>	No interactions observed or reported.
Bottlenose dolphin	<i>Tursiops truncatus</i>	No interactions observed or reported.
Bryde’s whale	<i>Balaenoptera edeni</i>	No interactions observed or reported.
Common dolphin	<i>Delphinus delphis</i>	No interactions observed or reported.
Cuvier’s beaked whale	<i>Ziphius cavirostris</i>	No interactions observed or reported.
Dwarf sperm whale	<i>Kogia sima</i>	No interactions observed or reported.
False killer whale	<i>Pseudorca crassidens</i>	No interactions observed or reported.

Common Name	Scientific Name	Interactions with the Fishery
Fraser's dolphin	<i>Lagenodelphis hosei</i>	No interactions observed or reported.
Killer whale	<i>Orcinus orca</i>	No interactions observed or reported.
Melon-headed whale	<i>Peponocephala electra</i>	No interactions observed or reported.
Minke whale	<i>Balaenoptera acutorostrata</i>	No interactions observed or reported.
Pygmy killer whale	<i>Feresa attenuata</i>	No interactions observed or reported.
Pygmy sperm whale	<i>Kogia breviceps</i>	No interactions observed or reported.
Risso's dolphin	<i>Grampus griseus</i>	No interactions observed or reported.
Rough-toothed dolphin	<i>Steno bredanensis</i>	No interactions observed or reported.
Short-finned pilot whale	<i>Globicephala macrorhynchus</i>	No interactions observed or reported.
Spinner dolphin	<i>Stenella longirostris</i>	No interactions observed or reported.
Spotted dolphin (Pantropical spotted dolphin)	<i>Stenella attenuata</i>	No interactions observed or reported.
Striped dolphin	<i>Stenella coeruleoalba</i>	No interactions observed or reported.
Longman's beaked whale	<i>Indopacetus pacificus</i>	No interactions observed or reported.

(Source: NMFS PIRO and PIFSC unpublished data)

* Species is also listed under the Endangered Species Act.

3.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) makes it illegal to intentionally take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid federal permit. On January 7, 2021, the USFWS published a final rule (effective February 8, 2021) defining the scope of the MBTA as it applies to conduct resulting in the injury or death of migratory birds protected by the MBTA (86 FR 1134). In that January 2021 rule, USFWS determined that the MBTA's prohibitions on pursuing, hunting, taking, capturing, killing, or attempting to do the same, apply only to actions directed at migratory birds, their nests, or their eggs. On October 4, 2021, USFWS published a final rule (effective December 3, 2021) revoking the January 2021 rule, and returning the implementation of the MBTA as prohibiting incidental take and applying enforcement discretion consistent to USFWS practice prior to 2017 (86 FR 54642). NMFS and the Council continue to monitor interactions with seabirds.

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

There has only been one confirmed sighting of the threatened Newell’s shearwater in American Samoa (Grant et al. 1994), and it appears to be an uncommon visitor to the archipelago. There have been no reports of interactions between the American Samoa bottomfish fishery and seabirds (WPRFMC 2009).

Table 16: Seabirds occurring in American Samoa.

Samoa name	English name	Scientific name
Residents (i.e., breeding)		
Taio	Wedge-tailed shearwater	<i>Puffinus pacificus</i>
Taio	Audubon’s shearwater	<i>Puffinus lherminieri</i>
Taio	Christmas shearwater	<i>Puffinus nativitatis</i>
Taio	Tahiti petrel	<i>Pterodroma rostrata</i>
Taio	Herald petrel	<i>Pterodroma heraldica</i>
Taio	Collared petrel	<i>Pterodroma brevipes</i>
Fuao	Red-footed booby	<i>Sula</i>
Fuao	Brown booby	<i>Sula leucogaster</i>
Fuao	Masked booby	<i>Sula dactylatra</i>
Tavaesina	White-tailed tropicbird	<i>Phaethon lepturus</i>
Tavaeula	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>
Taio	Short-tailed shearwater	<i>Puffinus tenuirostris</i>
Taio	Newell’s shearwater (ESA threatened)	<i>Puffinus auricularis newelli</i>
Taio	Mottled petrel	<i>Pterodroma inexpectata</i>
Taio	Phoenix petrel	<i>Pterodroma alba</i>
Taio	White-bellied storm petrel	<i>Fregetta grallaria</i>
Taio	Polynesian storm petrel	<i>Nesofregetta fuliginosa</i>
-----	Laughing gull	<i>Larus atricilla</i>
Gogosina	Black-naped tern	<i>Sterna sumatrana</i>

(Source: WPRFMC 2009; online sources).

3.3.1 Marine Habitat and Protected Areas

Bottomfish fishing is prohibited through federal management in the Rose Atoll Marine National Monument, the National Marine Sanctuary of American Samoa in the Fagatele Bay unit, and the research zone of the Aunuu Island units. It is also prohibited in the territorial MPAs where and/or

when fishing is prohibited, such as the no-take Fagamalo Village Marine Protected Area. The bottomfish fishery as currently managed does not have any adverse effects on the MPAs.

3.4 Essential Fish Habitat

The Magnuson-Stevens Act defines essential fish habitat (EFH) as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” (Magnuson-Stevens Act § 3(10)). 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;
- 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 of the Bottomfish and Seamount Groundfish fishery management plan (FMP) (Amendment 6), Crustacean FMP (Amendment 10), Pelagic FMP (Amendment 8), and Precious Corals FMP (Amendment 4) (64 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 approved EFH definitions for deepwater shrimp through an amendment to the Crustaceans FMP in 2008 (73 FR 70603, November 21, 2008).

In 2009, the Council developed and NMFS approved five new archipelagic-based FEPs. The FEPs incorporated and reorganized elements of the Councils’ species-based FMPs into a spatially-oriented management plan (75 FR 2198, January 14, 2010). The Council subsequently carried forward EFH definitions and related provisions for all FMP fishery resources into the respective FEPs.

Table 17 summarizes the designated areas of EFH and HAPC for American Samoa FEP BMUS by life stage. To analyze the potential effects of a proposed fishery management action on EFH, one must consider all designated EFH.

According to the most recent bottomfish fishery ESA consultations for American Samoa (Table 13), the current bottomfish fishery does not have an adverse effect on listed corals in

American Samoa. The findings were based on the fact that the fishery is a targeted fishery with little bycatch or gear contact with the bottom (i.e., no trawling, nets, traps, etc. and only a few weighted hooks and lines deployed at a time). This fishery is not known to adversely affect habitat. Similar methods are used to fish for bottomfish in American Samoa and Hawai‘i, and studies of bottomfish habitat in Hawai‘i have not found adverse impacts to habitat from bottomfish fishing activities (Kelley and Moffit 2004; Kelley and Ikehara 2006). Also, to prevent and minimize adverse bottomfish fishing impacts to EFH, each western Pacific FEP prohibits the use of explosives, poisons, bottom trawl, and other non-selective and destructive fishing gear.

Table 17: Essential fish habitat (EFH) and habitat areas of particular concern (HAPC) for American Samoa bottomfish MUS.

Bottomfish MUS	EFH	HAPC
Lehi (<i>A. rutilans</i>), asoama (<i>A. virescens</i>), black trevally (<i>C. lugubris</i>), ehū (<i>E. carbunculus</i>), onaga (<i>E. coruscans</i>), redgill emperor (<i>L. rubrioperculatus</i>), blue-line snapper (<i>L. kasmira</i>), opakapaka (<i>P. filamentosus</i>), yelloweye snapper (<i>P. flavipinnis</i>), gindai (<i>P. zonatus</i>), lyretail grouper (<i>V. louti</i>).	<p>Eggs and larvae: the water column extending from the shoreline to the outer limit of the EEZ down to a depth of 400 m (200 fm).</p> <p>Juvenile/adults: the water column and all bottom habitat extending from the shoreline to a depth of 400 m (200 fm)</p>	All slopes and escarpments between 40–280 m (20 and 140 fm)

3.5 Physical Resources

The American Samoa FEP describes the physical environment of the Pacific Ocean. The dynamics of the Pacific Ocean’s physical environment have direct and indirect effects on the occurrence and distribution of life in marine ecosystems. For a comprehensive discussion on physical resources in American Samoa, see the [FEP](#) (WPRFMC 2009).

3.6 Socioeconomic Setting

The socioeconomic setting for the American Samoa bottomfish fishery is described below. A more detailed description of the fishery and the latest socioeconomic statistics can be found in the [FEP Annual SAFE Reports](#).

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 further specifies in the National Standard guidelines that a fishing community is “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)”.

In 1998, the Council identified American Samoa as a fishing community and requested the Secretary of Commerce concur with this determination. American Samoa was recognized in

regulation as a fishing community under the Magnuson-Stevens Act on April 19, 1999 (64 FR 19067). The community continues to participate in the Council decision-making process through its representatives on the Council, its Advisory Panel members, and through opportunities for public input during the Council’s deliberations and through public comment periods during NMFSs rulemaking process.

The 2024 LOF estimated 44 participants in the American Samoa bottomfish fishery (89 FR 12257, February 16, 2024). Fishing for bottomfish primarily occurs using aluminum *‘alia* catamarans less than 32 ft in length that are outfitted with outboard engines and wooden hand reels that fishermen use for both trolling and bottomfish fishing. Commercial and non-commercial fisheries for bottomfish occur primarily less than 20 miles from shore because few vessels carry ice, although some fishermen make longer trips to offshore banks in Federal waters (Brodziak et al. 2012).

“Cultural fishing” is a relatively new term and is not readily defined (Kleiber and Leong 2018). 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 as specific ceremonial events. In a letter to NMFS on June 15, 2020, the DMWR highlighted that deepwater snappers are critical for cultural ceremonies and *fa’a lavelave* (e.g., funerals, weddings, births, special birthdays). Cultural fishing would also encompass day-to-day practices of subsistence, and coral reef fisheries are particularly important from a dietary and socio-cultural standpoint (Kilarski et al. 2006; Levine and Allen 2009).

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations,” requires consideration of how federal projects may result in disproportionately high and adverse human health or environmental effects on minority and low-income populations. According to the U.S. Census, 50.7% of families had incomes below the poverty level in American Samoa in 2019. Higher levels of poverty are associated with a community’s poorer access to resources that can be used to adapt to changing conditions in social, economic, or ecological systems (Kleiber et al., 2018). Given the social and cultural importance of fishing to American Samoa, NMFS considers current conditions in the community and evaluates potential impacts of the proposed management action through the perspective of environmental justice and disproportionate environmental impacts.

The demand for bottomfish on American Samoa varies depending on the need for fish at government and cultural events, and *‘alia* fishermen may switch to bottomfish fishing during periods when longline catches or prices are low (WPRFMC 2021). In 2023, PIFSC published a report on the economic and social characteristics of the American Samoa small boat fishery (Dombrow and Hospital 2023) that surveyed 33 small boat fishers from Tutuila and the Manu‘a islands. Based on the results, 90 percent of the respondents said they sold a portion of their catch and reported that on average 39 percent of their personal income came from selling their catch at a median value of \$751 of fish in 2020. Thirty-eight percent of respondents who sold fish

reported that most of their catch was sold to friends, neighbors, and coworkers, followed by roadside or farmers’ markets, and restaurant and stores. The values differed between Tutuila and the Manu‘a Islands as noted in Table 18. Of the bottomfish respondents, they reported that 48 percent of their catch was sold, 30 percent was for subsistence, 20 percent was given away and 2 percent was released.

Table 18: The percent of fish sold in different market channels in Tutuila and the Manu‘a Islands based on survey responses (Dombrow and Hospital 2023).

Island Group	Fagatogo Market Place	Restaurants and Stores	Roadside/ Farmers’ Market	Friends/Neighbors/Coworkers	Other
Tutuila	5.6	27.8	36.1	27.8	2.8
Manu‘a Islands	0	8.3	8.3	66.7	16.7

3.7 Management Setting

The Council currently manages fisheries in Federal waters in accordance with the approved FEPs, and NMFS PIRO is responsible for implementing fishery regulations that implement the FEPs. NMFS PIFSC conducts research and reviews fishery data provided through logbooks and fishery monitoring systems administered by territorial resource management agencies such as DMWR. The Council, PIRO, and PIFSC collaborate with local agencies in the administration of fisheries of the western Pacific through other activities including coordinating meetings, conducting research, developing information, processing fishery management actions, training fishery participants, and conducting educational and outreach activities for the benefit of fishery communities.

NOAA’s Office of Law Enforcement (OLE) is responsible for enforcement of the nation’s marine resource laws, including those regulating fisheries and protected resources. OLE, Pacific Islands Division oversees enforcement of federal regulations in American Samoa and enters into Joint Enforcement Agreements with the territory.

The U.S. Coast Guard’s (USCG) Fourteenth District (Honolulu) jurisdiction is the EEZ and high seas in the western and central Pacific. At over 10 million square miles, its area of responsibility is the largest of any USCG District. The USCG patrols the region with airplanes, helicopters, and surface vessels.

Federal regulations at 50 CFR 665.4 (76 FR 37285, June 27, 2011) require NMFS to specify ACLs and AMs for each stock or stock complex of MUS identified in an FEP, as recommended by the Council, and in consideration of the best available scientific, commercial, and other information about the fishery for that stock or stock complex. This fishery has been managed by NMFS and the Council through the specification of ACLs and AMs since 2012, in coordination with the American Samoa DMWR. Since May 2022, the fishery has been subject to an ACL of 5,000 lb under a rebuilding plan (87 FR 25590). For information regarding data collection, see section 1.2 of the FEP.

3.8 Resources Eliminated from Detailed Study

Overall, NMFS does not expect the proposed management action to have an effect on objects or places listed in the National Register of Historical Places. Historical and archaeological resources may be found in Federal waters of American Samoa in the future, but 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 in the areas that the federal bottomfish fishery operates. Shipwrecks may exist in areas where the fishery operates, but the fishery is not known to adversely affect shipwrecks because bottomfish fishers tend to avoid fishing in, anchoring on, and anchoring near known shipwrecks to avoid losing gear. Historical and archaeological resources will not be discussed further.

Sites with unique scientific resources have not been identified in American Samoa, apart from those protected as MPAs. Fishing is generally restricted in these areas, including fishing for bottomfish, so this fishery would not affect MPAs. While fishing may occur in areas of potential scientific or historical interest, the fishery is not currently known to cause loss or destruction to any such resources. Because management under the action Alternatives is not expected to result in significant changes to the conduct of the fishery in this scenario, none of the action Alternatives are expected affect scientific, historic, or archaeological importance. These resources will not be discussed further.

Bottomfish fishing is not known to be a potential vector for spreading alien species as none of the bottomfish vessels fish outside of their respective archipelagic waters. The vessels are also small boats that do not use ballast water, so that would not be a potential mechanism for spreading introduced species. Because fishing would not change in this regard under any of the proposed Alternatives, the proposed action would not have the potential to spread invasive species into or within the waters of American Samoa. Invasive species are not discussed further.

Precious coral species may occur in American Samoa, but there are no known precious coral beds in waters around American Samoa (WPRFMC 2009). No precious corals are listed under the ESA. Although little is known about the distribution and abundance of precious corals in American Samoa, bottomfish fishing is unlikely to affect these species. Exposure of precious corals to damage from bottomfish fishing activities is limited due to existing federal regulations (e.g., prohibition on the use of trawls, poisons, explosives) that are not subject to change due to the proposed action. Precious corals are not discussed further.

4 Potential Effects of the Alternatives

This chapter describes the potential environmental and management effects that could result from the Alternatives considered and described in Chapter 2. The analysis relies on the information described in Chapter 3 as the baseline to evaluate the potential impacts of the management Alternatives in fishing years 2024 through 2026. The resources that are included for analysis are: physical resources; protected resources; public health and safety; biodiversity and ecosystem function; scientific, historic, archeological, and cultural resources; target and non-target species; socioeconomic setting; and management setting. Cumulative effects and effects from climate change are also considered in Section 4.5. Table 19 summarizes the Alternatives and their potential effects.

Table 19: Summary of Effects of the Alternatives.

	Alternative 1	Alternative 2a	Alternative 2b	Alternative 2c
Overview	No action – Continue the rebuilding plan	Discontinue rebuilding plan – implement an aggregate ACL and AMs	Discontinue rebuilding plan – implement single-species ACLs and AMs	Discontinue rebuilding plan – implement single-species ACLs and AMs
Annual Catch Limit(s)	5,000 lb for the BMUS complex (11 species)	52,888 lb for the BMUS complex (9 assessed species)	Single-species ACLs determined by P*/SEEM (See Table 7)	Single-species ACLs < limits indicated by P*/SEEM (See Table 7)
Accountability Measures	Monitor catch of the BMUS complex in-season and close the fishery in Federal waters if the ACL is projected to be reached If the ACL is exceeded close federal fishery until coordinated state-federal management is established	Evaluate catch post-season and reduce ACL if the average catch over 3 years exceeds the ACL.	Evaluate catch for each species post-season. If the average 3-year catch of a species exceeds the ACL, reduce the catch limit by the amount of the overage in the next fishing year.	Evaluate catch for each species post-season. If the average 3-year catch of a species exceeds the ACL, reduce the catch limit by the amount of the overage in the next fishing year.
Physical Resources including protected habitat	The fishery is not known to affect physical resources.	No change expected	No change expected	No change expected
Protected Resources	The fishery is not likely to adversely affect any endangered species or result in an adverse modification of critical habitat.	No change expected	No change expected	No change expected

	Alternative 1	Alternative 2a	Alternative 2b	Alternative 2c
Overview	No action – Continue the rebuilding plan	Discontinue rebuilding plan – implement an aggregate ACL and AMs	Discontinue rebuilding plan – implement single-species ACLs and AMs	Discontinue rebuilding plan – implement single-species ACLs and AMs
Target Stocks	<p>Catch similar to recent years under the rebuilding plan.</p> <p>NMFS determined that none of the BMUS in American Samoa are overfished or experiencing overfishing, but this option would not reflect that status.</p> <p>Most restrictive option under consideration.</p> <p>Does not comply with Magnuson-Stevens Act, NS-2.</p>	<p>NMFS determined that none of the BMUS in American Samoa are overfished or experiencing overfishing. If a higher ACL is implemented, catch and participation in the fishery may increase.</p> <p>Aggregate ACL and AM may not prevent overfishing of individual species.</p> <p>Does not comply with Magnuson-Stevens Act, NS-1 or NS-2.</p>	<p>NMFS determined that none of the BMUS in American Samoa are overfished or experiencing overfishing. If a higher ACL is implemented, catch and participation in the fishery may increase.</p> <p>Scientific and management uncertainty are accounted for in ACLs and AMs</p> <p>ACLs are higher than average catch of any species in 2019-2021</p> <p>ACL and AM would prevent overfishing of individual species.</p> <p>Complies with Magnuson-Stevens Act, NS-1 and NS-2; and is based on BSIA</p>	<p>NMFS determined that none of the BMUS in American Samoa are overfished or experiencing overfishing. If a higher ACL is implemented, catch and participation in the fishery may increase.</p> <p>Sets a more conservative ACL than options 2a and 2b by accounting for more scientific and management uncertainty than is indicated by the P* and SEEM analysis</p> <p>ACLs are higher than average catch of any species in 2019-2021</p> <p>ACL and AM would prevent overfishing of individual species.</p> <p>Complies with Magnuson-Stevens Act, NS-1 and NS-2; and is based on BSIA,</p>

	Alternative 1	Alternative 2a	Alternative 2b	Alternative 2c
Overview	No action – Continue the rebuilding plan	Discontinue rebuilding plan – implement an aggregate ACL and AMs	Discontinue rebuilding plan – implement single-species ACLs and AMs	Discontinue rebuilding plan – implement single-species ACLs and AMs
Non-Target Stocks	<p>Catch and retention of non-BMUS stocks in the fishery is expected to continue.</p> <p>Continuing the rebuilding plan is not expected to change the rate or proportion of catch of non-BMUS species from recent years.</p>	<p>Catch and retention of non-BMUS stocks in the fishery is expected to continue.</p> <p>The rate or proportion of catch of non-BMUS is not expected to change from recent years.</p> <p>If fishing effort increase under the higher ACL, catch of non-BMUS is expected to increase proportionally to the increase in effort.</p>	<p>Catch and retention of non-BMUS stocks in the fishery is expected to continue.</p> <p>The rate or proportion of catch of non-BMUS is not expected to change from recent years.</p> <p>If fishing effort increases due to the higher ACL, catch of non-BMUS is expected to increase proportionally to the increase in effort.</p>	<p>Catch and retention of non-BMUS stocks in the fishery is expected to continue.</p> <p>The rate or proportion of catch of non-BMUS species is not expected to change from recent years.</p> <p>If fishing effort increases due to the higher ACL, then catch of non-BMUS is expected to increase proportionally to the increase in effort.</p> <p>Non-BMUS may benefit slightly compared to Alternatives 2a and 2b due to less fishing effort under the lower ACLs.</p>
Socio-economic Setting	The fishery is not impacting the socio-economic setting in American Samoa.	Potential increased participation and revenue over baseline	Potential increased participation and revenue over baseline, and fishers are able to switch to different target species if one species is expected to reach its limit	Potential increased participation and revenue over baseline, and fishers are able to switch to different target species if one species is expected to reach its limit

	Alternative 1	Alternative 2a	Alternative 2b	Alternative 2c
Overview	No action – Continue the rebuilding plan	Discontinue rebuilding plan – implement an aggregate ACL and AMs	Discontinue rebuilding plan – implement single-species ACLs and AMs	Discontinue rebuilding plan – implement single-species ACLs and AMs
				Lower catch limits than Alt. 2b would lead to lower potential revenue
Management Setting	In season monitoring and relatively high likelihood of administrative burden to close the fishery due to low catch limit.	Lower likelihood of administrative burden from AM due to higher ACL than baseline.	Species managed are the same as those reported in SIS Lower likelihood of administrative burden from AM due to higher ACL than baseline, but higher than Alt. 2a.	Species managed are the same as those reported in SIS Lower likelihood of administrative burden from AM due to higher ACL than baseline, but higher than Alt. 2a. or Alt. 2b.
Public Health and Safety	The fishery is not known to affect public health and safety.	No change expected	No change expected	No change expected
Biodiversity and Ecosystem Function	The fishery is not known to affect biodiversity or ecosystem function.	No change expected	No change expected	No change expected
Scientific, Historic, Archeological and Cultural Resources	The fishery is not known to result in significant impacts to scientific, historic, archeological, or cultural sites.	No change expected	No change expected	No change expected

4.1 Effects Common to All Alternatives

All Alternatives under consideration pertain to the amount of allowable harvest of bottomfish species in 2024–2026. Decisions to establish ACLs and AMs under any of the Alternatives would not establish precedents or narrow decisions about future specifications. None of the Alternatives considered would change the conduct of the fishery with respect to areas fished, gear used, or methods employed. None of the proposed Alternatives would affect the Council or NMFS' ability to establish effective ACLs or AMs in the future.

Therefore, the effects described in sections 4.1.1 through 4.1.6 are considered to be the same under all Alternatives. Subsequently, effects that may differ between Alternatives are considered separately for each Alternative in Sections 4.2 through 4.4.

4.1.1 Effects on Physical Resources

Given the characteristics of the fishing fleet (e.g., small vessels and engines) and the offshore nature of the fishery, there are no known significant impacts to air quality, noise, water quality, view planes, or terrestrial resources from past or current bottomfish fishing activity in American Samoa. The fishery does not have adverse effects on unique features of the geographic environment, and fishing behavior and effort are not expected to change under any Alternative in a manner that would result in effects on physical resources.

Because fishing activity is not expected to change substantially from previous years under any of the Alternatives, it is unlikely that the fishery would affect vulnerable marine ecosystems such as deep or shallow coral ecosystems under these Alternatives. According to the most recent ESA consultations for the bottomfish fishery in American Samoa, it does not have an adverse effect on listed corals in American Samoa. In addition, the most recent consultations found that the fishery does not adversely effect EFH or HAPC. The findings were based on the fact that the fishery is a targeted fishery with very little bycatch or gear contact with the bottom (i.e., no trawling, nets, traps, etc. and only two to four weighted hooks and lines per vessel). The FEP also prohibits the use of explosives, poisons, bottom trawls, and other non-selective and destructive fishing gear, and no Alternative would change regulations that are in place to prevent and minimize adverse effects from bottomfish fishing on habitat, including EFH and HAPC.

Bottomfish fishing is prohibited in the Rose Atoll Marine National Monument, the National Marine Sanctuary of American Samoa in the Fagatele Bay unit, and the research zone of the Aunu'u Island units. It is also prohibited in the territorial MPAs. The bottomfish fishery as currently managed does not have any adverse effects on the MPAs. None of the Alternatives under consideration would change the regulations for any marine sanctuary with respect to bottomfish fishing. No Alternative would affect the bottomfish fishing regulations in territorial MPAs.

Cumulative impacts to physical resources are not expected under any Alternative. For the above-listed reasons, none of the Alternatives are expected to lead to substantial physical, chemical, or biological alterations to ocean, coral, or coastal habitats or result in impacts to the marine habitat, including areas designated as EFH, HAPC, or unique areas such as MPAs or deep coral ecosystems.

4.1.2 Effects on Protected Resources

Bottomfish fishing is conducted using wooden hand reels, and this method is target-specific, based on the depth fished and bait type used. None of the Alternatives would fundamentally change the way the fishery is conducted with respect to areas fished, gear used, or methods employed. Therefore, no Alternative is expected to impact marine mammals, sea birds, species protected under the ESA or critical habitat for ESA-listed species in a manner that has not been previously considered.

Table 13 lists the consultation history for all ESA-listed species that occur in the area of operation for the fishery. All recent, valid consultations for the fishery have determined that the American Samoa bottomfish fishery is not likely to adversely affect any ESA-listed species. The 2022 biological opinion also addressed the new ESA listings of the oceanic whitetip shark, giant manta ray, and chambered nautilus, and determined that the American Samoa bottomfish fishery is not likely to adversely affect these species.

The American Samoa bottomfish fishery is also not known to affect marine mammal or seabird species through gear interactions or disruptions in or adverse effects on prey (NMFS 2022a). Furthermore, NMFS classifies the American Samoa bottomfish fishery as a Category III fishery under Section 118 of the MMPA (89 FR 12257, February 16, 2024) because it has no known incidental takings of marine mammals.

The American Samoa bottomfish fishery is not known to adversely affect habitat. Similar methods are used to fish for bottomfish in American Samoa and Hawai‘i, and studies of bottomfish habitat in Hawai‘i have not found adverse impacts to habitat from bottomfish fishing activities (Kelley and Moffit 2004; Kelley and Ikehara 2006). Also, to prevent and minimize adverse bottomfish fishing impacts to EFH, each western Pacific FEP prohibits the use of explosives, poisons, bottom trawl, and other non-selective and destructive fishing gear. No Alternative under consideration would result in substantial changes to the way fishermen conduct the bottomfish fishery in American Samoa; therefore, the Alternatives are not expected to result in adverse effects on bottomfish EFH or HAPC.

Due to the low number of participants and low level of fishing activity in the bottomfish fishery, coral habitat is not likely to be damaged by the current action. There is a low likelihood of bottomfish gear contact with corals, and therefore damage to coral from gear is unlikely to occur. While exposure to waste from fishing vessels may occasionally occur, NMFS does not anticipate that this would be a serious stressor for the listed corals and their proposed critical habitat given strict Federal laws and associated civil and criminal fines and possible imprisonment for violations. Any hydrocarbon-based chemicals such as fuel or hydraulic fluids that may enter the marine environment during transit or fishing operations will likely be infrequent, small, and quickly diluted or dispersed. Therefore, exposure to waste and discharge in transit or during fishing operations with listed corals and their proposed critical habitat is extremely unlikely to occur and, therefore, discountable.

Bottomfish fishing is prohibited through federal management in the Rose Atoll Marine National Monument, the National Marine Sanctuary of American Samoa in the Fagatele Bay unit, and the research zone of the Aunuu Island units. It is also prohibited in the territorial MPAs where and/or

when fishing is prohibited, such as the no-take Fagamalo Village Marine Protected Area. The bottomfish fishery as currently managed does not have any adverse effects on the MPAs, and none of the proposed Alternatives would change management of the fishery with respect to MPAs. No Alternative is expected to result in adverse effects to MPAs. Effects on Public Health and Safety

The bottomfish fishery operating under the FEP is not known to experience or cause other public health or safety-at-sea issues. The proposed ACLs and AMs would not result in any change to the fishery that would pose an additional risk to human safety at sea.

4.1.3 Effects on Biodiversity and Ecosystem Function

To date, there have been no identified effects to marine biodiversity and/or ecosystem function from the American Samoa bottomfish fishery. Bottomfish species are not known to have critical ecosystem roles, such as those of parrotfishes or reef-building corals (Bozec et al. 2013; Wild et al. 2011), and the fishery is not known to have large effects on biodiversity or ecosystem function. Also, the continuation of the fisheries under any of the Alternatives would not result in concerns regarding predator-prey relationships. None of the Alternatives would fundamentally change the fishery's impacts to biodiversity and ecosystem function.

4.1.4 Effects on Scientific, Historic, Archeological, and Cultural Resources

NMFS is not aware of any districts, sites, structures, or objects listed in or eligible for listing in the National Register of Historic Places within areas fished by the bottomfish fishery. The fishery is not known to result in significant impacts to scientific, historic, archeological, or cultural sites. The proposed action would not change the fishery in any manner that would result in effects to such sites; therefore, there is no potential for loss or destruction of significant scientific, cultural, or historical resources in the marine environment. The potential effects of the Alternatives on cultural practices is discussed for each Alternative in Sections 4.2.2, 4.3.2, and 4.4.2.

4.2 Potential Effects of Alternative 1: Continue the rebuilding plan (No Action)

The analysis in this subsection presents the potential effects of Alternative 1, which would continue the rebuilding plan and an ACL of 5,000 lb. AMs to monitor catch in season and close the fishery in Federal waters if the ACL is reached, or is projected to be reached, would also remain in place until the Council decides to take action. The rebuilding plan was put into place because the bottomfish stock complex was determined to be overfished and experiencing overfishing in the 2019 stock assessment (Langseth et al. 2019). The rebuilding plan was intended to prevent overfishing while rebuilding the American Samoa bottomfish fishery to its B_{MSY} within 10 years. However, the most recent benchmark stock assessment (Nadon et al. 2023) concluded that none of the assessed stocks were overfished nor experiencing overfishing in 2017 or any subsequent year. Alternative 1 would maintain the rebuilding plan and its associated AMs, despite BSIA indicating that the fishery is no longer overfished or experiencing overfishing (NMFS 2023) and could sustain higher overall catches.

4.2.1 Effects on Target and non-target stocks

Under Alternative 1, the American Samoa bottomfish rebuilding plan would continue with an ACL of 5,000 lb, an in-season AM, and a higher performance standard (NMFS 2022). This level of catch is less than 10 percent of the summed OFLs of the nine assessed BMUS in the 2023 stock assessment. Under this Alternative, NMFS would close Federal waters for the remainder of the fishing year if the ACL was projected to be reached in season, and NMFS would close Federal waters until the territory establishes complementary management if the ACL was exceeded. Eighty-five percent of BMUS habitat occurs in territorial waters, so it is expected that most fishing occurs in territorial waters, and some fishing that would occur in Federal waters may be displaced to territorial waters in the event of a closure. NMFS and the Council do not have detailed geographic catch information to provide a quantitative estimate of how much fishing would be displaced, but the nearshore fish assemblage is likely to be smaller, more reef-associated species so it is likely that catches of deeper, more offshore species would be reduced. The ACL and associated AMs under this Alternative do not consider the most recent benchmark stock assessment (Nadon et al. 2023) that concluded the fishery was neither overfished nor experiencing overfishing, and may unnecessarily reduce the potential catch or increase effort in territorial waters if the AMs were implemented.

Fishing effort and participation in the fishery have decreased since the implementation of the rebuilding plan. Prior to implementation of public health measures to reduce the spread of COVID-19 in mid-2020, the average annual catch from 2017 to 2019 was 12,841 lb, which exceeds the 5,000 lb catch limit and would result in a closure of the fishery in Federal waters until the territory implemented complementary management. The number of bottomfish fishing, mixed bottomfish-trolling, and spearfishing vessels has declined from 27 vessels in 2016 to 9 vessels fishing in 2022 (WPRFMC 2023a). The average catch of BMUS from 2020 to 2022 was 4,114 lb, which is 82 percent of the catch limit under Alternative 1. In 2022, fishers reported that bottomfish were rare in the market, with many being imported from independent Samoa (WPRFMC 2023a). Under Alternative 1, fishing effort, behavior, and catches are expected to remain similar to catch levels in 2020 to 2022 as the current status quo.

Alternative 1 allows the least amount of total authorized BMUS catch out of all the Alternatives. It would be the most conservative approach, and both target and non-target stocks may benefit from less fishing pressure than under Alternatives 2a-2c if fishing increased to levels authorized under those Alternatives. In 2013–2022, average BMUS catch accounted for 40 percent of the total catch from vessels using bottomfish gear, 23 percent of catch from vessels using bottomfish-trolling gear, and 1 percent of catch from boat-based spearfishing in American Samoa (WPRFMC 2023a). Other catch was comprised of ECS, pelagic MUS, and invertebrates. ECS are described under NS-1 as stocks that are included in an FEP to achieve ecosystem management objectives, but do not require conservation and management in the form of ACLs and AMs.

Bottomfish fishing does not result in bycatch, and creel survey fishermen interviews for the American Samoa bottomfish fishery indicated that no fish were released in 2022 (see Table 12 in WPRFMC 2023a). Under Alternative 1, catch and retention of non-BMUS stocks in the bottomfish fishery is expected to continue. Continuing the rebuilding plan is not expected to change the rate or proportion of catch of non-BMUS species from recent years. If fishing for

bottomfish were to be closed in Federal waters due to the implementation of the AM or higher performance standard, non-BMUS species that are typically caught on bottomfish trips in Federal waters may have a slight localized benefit in those areas from reduced bottomfish fishing.

However, this Alternative would continue to manage BMUS as a complex, and as if the complex was in an overfished and overfishing status, and it would not consider the single-species analyses in the 2023 benchmark stock assessment to set catch limits. Doing so would not reflect BSIA, as it does not appropriately incorporate the results of the 2023 benchmark stock assessment. For this reason, this Alternative would not be in compliance with Magnuson-Stevens Act NS-2.

Alternative 1 does not allow management of fishing effort on a single-species level, and catch of some species under a complex-level ACL may be disproportionality high compared to their ABC or OFL. The complex-level, 5,000 lb ACL is more than twice the OFL for *P. zonatus* (1,609 lb), and *V. louti* (2,425 lb). If fishing effort was disproportionately high on these species compared to other BMUS, catch could significantly exceed their OFLs under the 5,000 lb limit. The 5,000 lb ACL also exceeds the OFL for *C. lugubris* (3,219 lb) and *P. flavipinnis* (2,844 lb), and is higher than the ABCs for *A. virescens* (4,960 lb), *C. lugubris* (3,131 lb), *P. flavipinnis* (2,668 lb), *P. zonatus* (1,565 lb), and *V. louti* (2,271 lb). AMs under Alternative 1 would neither prevent nor mitigate overfishing of individual species because they would be implemented based on total BMUS catch, rather than the catch of individual species. Alternative 1 is therefore not consistent with NS-1, and individual species could be harvested at unsustainable levels.

4.2.2 Effects on Socioeconomic Setting

American Samoa culture is often framed in terms of *fa'a Samoa*, or the “Samoan Way” (see Section 3.4). In a fisheries context, this may mean the distribution of catch within the *aiga* (family groups), or the use of fish at specific ceremonial events. In a letter to NMFS on June 15, 2020, the DMWR highlighted that deepwater snappers are critical for cultural ceremonies and *fa'a lavelave* (e.g., funerals, weddings, births, or special birthdays). The importance of subsistence and cultural use is evident during these important community events, and demand for bottomfish varies depending on the need for fish at government and cultural events (WPRFMC 2021).

Between 2017 and 2019, American Samoa bottomfish fishermen caught an average of 12,499 lb of bottomfish annually and sold an average of 1,239 lb per year, or an annual average of 9.9 percent of their catch. In 2019, before the onset of the COVID 19 pandemic and its effects on local markets, the average price per pound was \$4.24. Adjusted for 2022 dollars, the average adjusted price per pound was \$5.09 (WPRFMC 2023a). Based on the responses from the PIFSC 2021 American Samoa cost-earning survey report, there is high uncertainty with the estimated commercial value of the bottomfish catch. Bottomfish fishermen who participated in the survey said they sold about 50 percent of their bottomfish catch, kept 30 percent for subsistence, and gave away 20 percent of their catch (Dombrow and Hospital 2023). Assuming that the full ACL under Alternative 1 was caught and fishermen sold their catch for \$5.09 per lb, the total potential catch value would be \$25,450 with a potential commercial catch value between \$2,520 (9.9 percent sold, based on price per lb in WPRFMC 2023a) to \$12,725 (50 percent sold, based on Dombrow and Hospital 2023) per year (Table 20).

The number of bottomfish fishing, mixed bottomfish-trolling and spearfishing vessels has generally been declining, from 27 vessels fishing for BMUS in 2016 to 9 vessels in 2022 (WPRFMC 2023a). This decline in participation was likely exacerbated by the onset of the COVID-19 pandemic in 2020. Prior to 2020, average catch of BMUS species was 12,499 lb between 2017 and 2019, which is 250 percent greater than the current 5,000 lb catch limit. At \$5.09 per pound, this level of annual catch would bring in between \$6,298 (9.9 percent sold) and \$31,810 (50 percent sold). After NMFS implemented the rebuilding plan in 2022, catch of BMUS was 2,583 lb, which is 52 percent of the 5000 lb catch limit. This amount of catch would have resulted in a commercial value between \$1,301 (9.9 percent sold) and \$6,574 (50 percent sold) if catch was sold at \$5.09 per lb. Continuing to manage the fishery under the 5,000 lb limit may therefore unnecessarily limit the commercial revenue available to bottomfish fishers within the authorized catch limit.

Table 20: Value of the total ACL and commercial value of the total catch based on 9.9 and 50 percent of catch sold at a value of \$5.09 per pound.

Alternative	Total ACL Value	ACL value (9.9 percent sold)	ACL Value (50 percent sold)
Alt 1: ACL = 5,000 lb	\$25,450	\$2,520	\$12,725
Alt 2a: ACL = 52,888 lb	\$269,200	\$26,650	\$134,600
Alt 2b: single-species ACLs sum to 52,888	\$269,200	\$26,650	\$134,600
Alt 2c: single-species ACLs sum to 52,316 (P* 2 percent lower than 2b)	\$266,288	\$26,363	\$133,144
Alt 2c: single-species ACLs sum to 51,279 (P* 5 percent lower than 2b)	\$261,010	\$25,840	\$130,505
Alt 2c: single-species ACLs sum to 50,286 (P* 8 percent lower than 2b)	\$255,956	\$25,340	\$127,978
Alt 2c: single-species ACLs sum to 49,625 (P* 10 percent lower than 2b)	\$252,591	\$25,007	\$126,296

If fishing participation returned closer to pre-pandemic levels, the sectors of the fishery that rely on Federal waters may be constrained by the 5,000 lb catch limit and AMs under the rebuilding plan. AMs under the rebuilding plan are designed to rebuild an overfished stock, rather than prevent overfishing of a healthy stock. For this reason, NMFS would close Federal waters to fishing if the ACL was reached or if the ACL was projected to be reached. This would unnecessarily prohibit fishers from accessing BMUS resources in Federal waters, and catch of those species that are primarily harvested in Federal waters may be constrained. However, eighty-five percent of BMUS habitat occurs in territorial waters, so it is expected that most fishing occurs in territorial waters, and that some fishing that would have occurred in Federal waters would be displaced to territorial waters in the event of a closure.

If the federal fishery were closed, the impacts would be greater to fishermen who harvest predominately in Federal waters and those community components that rely on the fish they provide. If fishermen compensated for a closure of Federal waters by catching more bottomfish in territorial waters that remained open to fishing, then large cultural, economic, or social impacts are not expected if complementary management by DMWR is not implemented. At this

time, the territory has not implemented complementary management, and is not expected to do so, based on the results of the 2023 benchmark stock assessment. Therefore, we do not expect this alternative to have an effect in the short- or long-term on environmental justice, including subsistence fisheries and consumption.

4.2.3 Effects on Management Setting

Under Alternative 1, NMFS and the Council would continue to monitor catches of all 11 BMUS against the complex-level ACL. NMFS will continue to monitor catch data as it becomes available, in collaboration with local resource management agencies and the Council (Section 1.6).

The in-season AM would require NMFS to close the fishery in Federal waters if the ACL was projected to be reached. NMFS would not require an additional action by the Council to close Federal waters, but a closure would require administrative resources by NMFS to close the fishery and enforce the closure. If the fishery were closed in American Samoa, NMFS OLE and the USCG would be responsible for enforcing the closure in Federal waters. The application of the performance standard to close the fishery in Federal waters in subsequent years until a new management approach is developed, would similarly require resources by NMFS to enact and enforce the closure.

Without sighting a vessel that is actively fishing for bottomfish in Federal waters, NMFS and the USCG may be unable to determine if BMUS were harvested in territorial or Federal waters, so effective enforcement may require increased effort by USCG, NMFS OLE or territorial agencies. This would require significant time and investment by NMFS and/or the USCG.

Alternative 1 would not conflict with or reduce the efficacy of existing bottomfish resource management by any local resource management agency, NMFS, or the Council. Additionally, the proposed management measures would also not conflict with ACL and AM implementations for the other Western Pacific bottomfish fisheries in the CNMI, Guam, or Hawai'i because these fisheries are geographically separated. Fishermen would need to continue to comply with existing laws, learn about the potential for an in-season closure under the ACL, and comply with the no-retention regulation for bottomfish caught in Federal waters if a closure is implemented.

4.3 Potential Effects of Alternative 2a: Implement an aggregate ACL of 52,888 lb and a post-season AM for fishing years 2024–2026.

The analysis in this subsection present the anticipated effects of action Alternative 2a, which would utilize the results of the P* and SEEM analyses to set an aggregate ACL for the nine assessed BMUS and establish indicator species for unassessed *E. carbunculus* and *P. filamentosus*. The probability of overfishing tables from the stock assessment would be used to calculate single-species ACLs, and those numbers would be summed to produce the aggregate. However, the 2023 stock assessment estimates probability of overfishing on an individual species basis, and thus the probability of overfishing for the nine BMUS cannot be combined arithmetically. The probability of overfishing for the BMUS in aggregate is therefore unknown. As an AM, if the most recent three-year average aggregate catch exceeds the ACL, NMFS would reduce the ACL in the subsequent year by the amount of the overage.

4.3.1 Effects on Target and non-target stocks

Under Alternative 2a, fishing for American Samoa bottomfish would be subject to an aggregate, complex-level ACL of 52,888 lb for fishing years 2024 to 2026. Based on past fishery performance, the fishery would need to harvest approximately four times the 10-year average annual BMUS catch of 13,385 lb (Table 2, 2013-2022) to attain the ACL. If the most recent three-year average aggregate catch exceeds the ACL, NMFS would reduce the ACL in the subsequent year by the amount of the overage. However, it is unlikely that this AM would be implemented if catches remained consistent with recent years.

Prior to implementation of public health measures to reduce the spread of COVID-19 in mid-2020, the average catch from 2017 to 2019 was 12,499 lb, which is only 24 percent of the ACL under Alternative 2a. The number of bottomfish fishing, mixed bottomfish-trolling and spearfishing vessels has declined from 27 vessels in 2016 to 9 vessels fishing for BMUS in 2022 (WPRFMC 2023a). The average catch of BMUS from 2020 to 2022 was 4,114 lb, which is approximately 8 percent of the catch limit under Alternative 2a. In 2022, fishers reported that bottomfish were rare in the market, with many being imported from independent Samoa (WPRFMC 2023a). Under Alternative 2a, fishing effort and catches may increase due to the higher ACL and as social, cultural, and fishing activities return as the pandemic has ended. However, it is more likely that effort will be similar to recent years due to the declining trend in fishery participation and low number of vessels currently participating in the fishery. In 2022, only four vessels were recorded as harvesting BMUS with bottomfish fishing, two vessels were recorded as bottomfish-trolling, and three vessels used spearfishing for BMUS (WPRFMC 2023a). Even if effort were to increase under Alternative 2a, it is unlikely that it would increase to such an extent that the ACL would be reached and the AM would be implemented. In 2022 an average of 30 lb/trip of BMUS or 1.38 lb/gear hour were harvested by bottomfish fishing (WPRFMC 2023a). At this catch per unit effort (CPUE), it would take approximately 1,762 trips or 38,325 gear hours of bottomfish fishing to reach the ACL and this is outside the scope of fishery capacity based on the SAFE report (WPRFMC 2023a).

This Alternative allows the highest amount of total BMUS catch out of all the Alternatives along with Alternative 2b, and both target and non-target stocks may experience more authorized fishing pressure than under Alternatives 1 and 2c. In 2013–2022, average BMUS catch accounted for 40 percent of the total catch from vessels using bottomfish gear, 23 percent of catch from vessels using bottomfish-trolling gear, and 1 percent of catch from boat-based spearfishing in American Samoa (WPRFMC 2023a). Other catch was comprised of ECS, pelagic MUS, and invertebrates. ECS are described under NS-1 as stocks that are included in an FEP to achieve ecosystem management objectives, but do not require conservation and management in the form of ACLs and AMs.

Bottomfish fishing does not result in bycatch, and creel survey fishermen interviews for the American Samoa bottomfish fishery reported that no fish were released in 2022 (see Table 12 in WPRFMC 2023a). Under Alternative 2a, catch and retention of non-BMUS stocks in the bottomfish fishery is expected to continue. Setting an aggregate, complex-level ACL is not expected to change the rate or proportion of catch of non-BMUS species from recent years. If fishing for bottomfish were to increase under the higher ACL, then catch of non-BMUS species would be expected to increase proportionally to the increase in effort.

None of the nine assessed BMUS are currently overfished or subject to overfishing. However, Alternative 2a does not allow management of fishing effort on a single-species level and catch of some species under a complex-level ACL may be disproportionality high compared to their ABC or OFL. The 52,888 lb complex-level ACL is higher than all of the individual ABCs set by the SSC and the individual OFLs determined by the stock assessment for the nine assessed BMUS species. The aggregate ACL and its associated AMs would not prevent catch of any single-species from exceeding its ABC or OFL.

For example, the ABC for *A. virescens* is 4,960 lb, and its OFL is 5,115 lb. Under an aggregate ACL of 52,888 lb, the fishery could harvest significantly more *A. virescens* than its OFL or ABC, and overfishing of *A. virescens* could occur. Likewise, the OFL for all other BMUS (Table 11) could be exceeded by up to 502 (*A. rutilans*) to 3,287 (*P. zonatus*) percent. AMs under Alternative 2a neither prevent nor mitigate overfishing of individual species because they would be implemented based on total BMUS catch, rather than the catch of individual species. Alternative 2a is therefore not consistent with NS-1, and individual species could be harvested at unsustainable levels. This Alternative would not prevent overfishing of individual BMUS or individual BMUS from reaching an overfished state.

The 2023 benchmark assessed nine BMUS individually, and the results of the assessment apply to the individual species, not the BMUS complex in aggregate. The individual species' OFLs, ABCs, and ACLs are not meant to be summed to an aggregate value for the BMUS complex. The aggregate ACL does not have the same risk of the overfishing for the complex as the individual species ACLs that were summed to produce it, so the risk of overfishing at a complex-level ACL of 52,888 lb is unknown. Therefore, Alternative 2a is also not adequately based on BSIA and is not consistent with NS-2.

Alternative 2a does not comply with either NS-1 or NS-2. If the fishery were to exceed the OFL for any of the assessed BMUS, Alternative 2a would not provide regulatory ability to prevent overfishing and ensure the long-term sustainability of the resource.

4.3.2 Effects on Socioeconomic Setting

American Samoa culture is often framed in terms of *fa'a Samoa* (see Section 3.4). In a fisheries context, this may mean the distribution of catch within the *aiga* (family groups), or the use of fish at specific ceremonial events. In a letter to NMFS on June 15, 2020, the DMWR highlighted that deepwater snappers are critical for cultural ceremonies and *fa'a lavelave* (e.g., funerals, weddings, births, or special birthdays). The importance for subsistence and cultural use is evident during these important community events, and demand for bottomfish varies depending on the need for fish at government and cultural events (WPRFMC 2021).

Under Alternative 2a, the aggregate ACL of 52,888 lb would be much less restrictive than the status quo Alternative, which would continue the 5,000 lb ACL and AMs under the rebuilding plan. Therefore, we do not expect this alternative to have an effect in the short- or long-term on environmental justice, including subsistence fisheries and consumption. Between 2017 and 2019, American Samoa bottomfish fishermen caught an average of 12,499 lb of bottomfish annually and sold an average of 1,239 lb per year, or an annual average of 9.9 percent of their catch. In 2019, before the onset of the COVID 19 pandemic and its effects on local markets, the

average price per pound was \$4.24. Adjusted for 2022 dollars, the average adjusted price per pound was \$5.09 (WPRFMC 2023a). Responses from the PIFSC 2021 American Samoa cost-earning survey report indicated that there is high uncertainty with the estimated commercial value of the bottomfish catch. Bottomfish fishermen who participated in the survey said they sold about 50 percent of their bottomfish catch, kept 30 percent for subsistence, and gave away 20 percent of their catch (Dombrow and Hospital 2023). Assuming that the full ACL was caught and fishermen sold their catch for \$5.09 per lb, the total potential catch value at a complex-level ACL of 52,888 lb would be \$269,200 with a commercial value between \$26,651 (9.9 percent sold, based on WPRFMC 2023a) to \$134,600 (50 percent sold, based on Dombrow and Hospital 2023) per year (Table 20). Actual potential revenue could be higher because there is no ACL for *E. carbunculus* and *P. filamentosus*, and catch of these species is therefore not included in this analysis. This Alternative and Alternative 2b would have the highest potential economic revenue in comparison to Alternatives 1 and 2c (Table 20).

Under Alternative 2a, an overage adjustment would be used if the aggregate ACL is exceeded, rather than closing the fishery in Federal waters. This would allow fishers to continue harvesting BMUS species, providing greater economic opportunity, more fish for use in subsistence or cultural practices, and greater year-to-year consistency in the harvest of the fishery than is currently available under the rebuilding plan. Although this would provide economic opportunity, an aggregate ACL would not prevent overfishing of an individual species. Over time, fishing species at levels higher than their OFL or ABC may lead to a scarcity of that species, which would negatively impact both commercial profit and cultural practices which utilize that species.

4.3.3 Effects on Management Setting

The proposed ACL and AM under Alternative 2a would not require a change to monitoring or fishery data collection. NMFS will continue to monitor catch data in collaboration with local resource management agencies and the Council (Section 1.6). No changes to the role of law enforcement agents or the USCG would be required in association with implementing the proposed management action. Under this Alternative, if landings exceed the aggregate ACL, NMFS and the Council would implement the post-season AM. NMFS would not require an additional action by the Council to reduce the ACL by the amount of the overage in a subsequent year, but this action would require administrative resources by NMFS to change the ACL. If landings did exceed a single-species OFL, but did not exceed the aggregate ACL, then NMFS and the Council would not have the regulatory ability to prevent or remediate the overfishing of individual species.

Under Alternative 2a, NMFS would evaluate catch against the ACL based on an aggregate total of individual-species catch. However, NMFS reports stock status and performance relative to ACLs for BMUS to the SIS as individual species, and would continue to do so, despite an aggregate ACL. Stock status for *E. carbunculus* would be reported as a complex with *E. coruscans* and stock status for *P. filamentosus* would be reported as a complex with *P. flavipinnis*.

Alternative 2a would not conflict with or reduce the efficacy of existing bottomfish resource management by any local resource management agency. Additionally, the proposed management

measures would also not conflict with ACL and AM implementations for the other Western Pacific bottomfish fisheries in the CNMI, Guam, or Hawai‘i because these fisheries are geographically separated. Fishermen would need to continue to comply with existing laws under this Alternative.

4.4 Potential Effects of Alternatives 2b and 2c: Set single-species ACLs at or lower than catch associated with P* and SEEM scores

The analysis in this subsection presents the effects of Alternatives 2b and 2c, which would set nine single-species ACLs and establish indicator species for unassessed *E. carbunculus* and *P. filamentosus*. As an AM under both Alternatives, if the most recent three-year average catch of a species exceeds its ACL, NMFS would implement a revised ACL for that species in the subsequent year that is reduced by the amount of the overage. Alternative 2b sets the ACLs based on the results of the P* and SEEM analyses, whereas Alternative 2c takes a more cautious approach and sets the ACLs at levels that are lower than the P* and SEEM analyses results. Given that these Alternatives are similar with respect to setting ACLs and AMs, many of the subsections below present uniform effects. When different effects resulted during analysis, they are documented separately.

4.4.1 Effects on Target and non-target stocks

Alternatives 2b and 2c would set single-species ACLs that are below the OFL estimated for each species in the 2023 stock assessment and below the ABCs set by the SSC. Alternative 2b considers scientific and management uncertainty through the P* and SEEM analyses. Alternative 2c considers scientific and management uncertainty and takes a more precautionary approach to prevent overfishing by setting the catch limits lower than the P* and SEEM analysis. Single-species data is not reported in the SAFE reports (e.g., WPRFMC 2023a), but is available from the 2023 stock assessment (Nadon et al. 2023). Therefore, for this analysis, the individual species catch data from the 2023 stock assessment is used to evaluate effects for individual BMUS. This data may differ from the total BMUS catch reported in the SAFE reports, but represents BSIA for historic catch of the nine assessed species. When considering catch for the complex as a whole, we rely on the data reported through the SAFE reports, as it reflects the catch estimates used for management of the fishery.

In the three most recent years for which single-species catch data is available from the stock assessment (2019-2021), catch did not exceed 62 percent of the ACLs proposed under Alternatives 2b or 2c for any of the nine assessed species (Table 9). Although individual species ACLs under these Alternatives may be lower than the 5,000 lb complex-level ACL under the current rebuilding plan (e.g., the ACL for *C. lugubris* is 3,086 under Alternative 2b), the total allowable harvest of all BMUS under Alternative 2b is more than ten times the amount available under the rebuilding plan at 52,888 lb. This is the same amount of available catch as under the aggregate ACL proposed in Alternative 2a; however, the use of single-species ACLs prevents overfishing of any individual species and allows the implementation of an AM to mitigate the effects of harvest over the ACL of any individual species. Both Alternatives 2b and 2c provide the regulatory ability to prevent overfishing and ensure the long-term sustainability of the resource.

Prior to implementation of public health measures to reduce the spread of COVID-19 in mid-2020, the average catch from 2017 to 2019 was 12,499 lb. During this time period, the average annual catch of BMUS was as follows:

- *A. rutilans* was 2,727 lb (32 percent of the proposed ACL under Alternative 2b)
- *A. virescens* was 3,018 lb (62 percent of the proposed ACL under Alternative 2b)
- *C. lugubris* was 1,385 lb (45 percent of the proposed ACL under Alternative 2b)
- *E. coruscans* was 2,688 lb (55 percent of the proposed ACL under Alternative 2b)
- *L. rubrioperculatus* was 1,346 lb (16 percent of the proposed ACL under Alternative 2b)
- *L. kasmira* was 691 lb (4 percent of the proposed ACL under Alternative 2b)
- *P. flavipinnis* was 271 lb (11 percent of the proposed ACL under Alternative 2b)
- *P. zonatus* was 326 lb (21 percent of the proposed ACL under Alternative 2b)
- *V. louti* was 225 lb (10 percent of the proposed ACL under Alternative 2b)

The number of bottomfish fishing, mixed bottomfish-trolling and spearfishing vessels has declined from 27 vessels in 2016 to 9 vessels fishing for BMUS in 2022 (WPRFMC 2023a), and the average catch of BMUS from 2020 to 2022 was 4,114 lb. In 2022, fishers reported that bottomfish were rare in the market, with many being imported from independent Samoa (WPRFMC 2023a). Under Alternatives 2b and 2c, fishing effort and catches may increase due to the increase in total BMUS catch allowed under the single-species ACLs and the flexibility to switch target BMUS if one species reaches its ACL.

However, it is more likely that effort will be similar to recent years due to the declining trend in fishery participation and low number of vessels currently participating in the fishery. In 2022, only four vessels were recorded as harvesting BMUS with bottomfish fishing, less than three vessels were recorded as bottomfish-trolling, and three vessels used spearfishing for BMUS (WPRFMC 2023). Even if effort were to increase under Alternative 2b or 2c, it is unlikely that it would increase to such an extent that the ACLs would be reached. If recent catch trends in commercial and non-commercial fisheries continue through 2024–2026, then harvest of the nine assessed BMUS is not expected to exceed the proposed ACLs, and NMFS does not expect the American Samoa BMUS to be subject to overfishing or become overfished.

Alternative 2c would specify single-species ACLs that are lower than those proposed under Alternative 2b. This would take a more conservative harvest approach that would potentially lower the impacts of the fishery on the individual BMUS stocks in comparison to Alternative 2b. Under Alternative 2c, catch limits would range as follows:

- *A. rutilans*: 7,584 to 8,378 lb
- *A. virescens*: 4,696 to 4,850 lb
- *C. lugubris*: 2,954 to 3,064 lb
- *E. coruscans*: 4,431 to 4,784 lb
- *L. rubrioperculatus*: 8,333 to 8,510 lb
- *L. kasmira*: 15,785 to 16,491 lb
- *P. flavipinnis*: 2,359 to 2,535 lb
- for *P. zonatus*: 1,433 to 1,521 lb
- *V. louti*: 2,050 to 2,183 lb.

However, the stock assessment indicated that none of the assessed BMUS species are overfished or experiencing overfishing, and management uncertainty and scientific uncertainty are accounted for in the results of the P* and SEEM analyses. Furthermore, in 2019–2021 no species exceeded an average catch that was greater than 41 percent of its proposed ACL, if ACLs were set at a catch level that incurs the risk of overfishing indicated by the SEEM analysis (i.e., Alternative 2b). Therefore, there is no indication at this time that additional caution is warranted to lower the ACL beyond the results of the P* and SEEM analyses.

Alternative 2b allows the highest amount of total BMUS catch out of all the alternatives, along with Alternative 2a, and both target and non-target stocks may experience more fishing pressure than under Alternatives 1 and 2c. Although they are lower than the ACLs proposed under option 2b, the ACLs under Alternative 2c also allow significantly more total BMUS catch than Alternative 1. From 2013–2022, average BMUS catch accounted for 40 percent of the total catch from vessels using bottomfish gear, 23 percent of catch from vessels using bottomfish-trolling gear, and 1 percent of catch from boat-based spearfishing in American Samoa (WPRFMC 2023a). Other catch was comprised of ECS, pelagic MUS, and invertebrates. ECS are described under NS-1 as stocks that are included in an FEP to achieve ecosystem management objectives, but do not require conservation and management in the form of ACLs and AMs.

Bottomfish fishing does not result in bycatch, and no fish recorded in creel survey fishermen interviews for the American Samoa bottomfish fishery were released in 2022 (see Table 12 in WPRFMC 2023a). Under Alternatives 2b and 2c, catch and retention of non-BMUS stocks in the bottomfish fishery is expected to continue. Setting single-species ACLs is not expected to change the rate or proportion of catch of non-BMUS species from recent years. If fishing for bottomfish were to increase, then catch of non-BMUS species would be expected to increase proportionally to the increase in effort. Non-bottomfish species may benefit slightly under Alternative 2c compared to Alternative 2b due to the overall lower level of fishing effort under the lower ACLs.

Based on the recent performance of the fishery, total catches in fishing years 2024–2026 are expected to remain below the proposed ACLs for all species both Alternatives 2b and 2c. Under both Alternatives 2b and 2c, the ACLs and AMs together would result in continued sustainable management of the BMUS in Federal waters. Management of the fishery under Alternative 2b or Alternative 2c is expected to have minor beneficial effects to the BMUS in American Samoa due to the change to single-species management from complex level management.

4.4.2 Effects on Socioeconomic Setting

American Samoa culture is often framed in terms of *fa'a Samoa* (see Section 3.4). In a fisheries context, this may mean the distribution of catch within the *aiga* (family groups), or the use of fish at specific ceremonial events. In a letter to NMFS on June 15, 2020, the DMWR highlighted that deepwater snappers are critical for cultural ceremonies and *fa'a lavelave* (e.g., funerals, weddings, births, or special birthdays). The importance for subsistence and cultural use is evident during these important community events, and demand for bottomfish varies depending on the need for fish at government and cultural events (WPRFMC 2021). Between 2017 and 2019, American Samoa bottomfish fishermen caught an average of 12,499 lb of bottomfish annually and sold an average of 1,239 lb per year, or an annual average of 9.9 percent of their catch. In 2019, before the onset of the COVID 19 pandemic and its effects on local markets, the average

price per pound was \$4.24. Adjusted for 2022 dollars, the average adjusted price per pound was \$5.09 (WPRFMC 2023a).

Responses from the PIFSC 2021 American Samoa cost-earning survey report indicated that there is high uncertainty with the estimated commercial value of the bottomfish catch. Bottomfish fishermen who participated in the survey said they sold about 50 percent of their bottomfish catch, kept 30 percent for subsistence, and gave away 20 percent of their catch (Dombrow and Hospital 2023). Assuming that the full ACLs for all 9 BMUS were caught and fishermen sold their catch for \$5.09 per lb, the total potential catch value under Alternative 2b would be \$269,200 with a commercial value between \$26,651 (9.9 percent sold, based on WPRFMC 2023a) to \$134,600 (50 percent sold, based on Dombrow and Hospital 2023) per year (Table 20). This Alternative and Alternative 2a would have the highest potential economic revenue in comparison to Alternatives 1 and 2c (Table 20). Assuming that the full ACLs for all 9 BMUS were caught and fishermen sold their catch for \$5.09 per lb, the total catch value under Alternative 2c would be between \$252,591 and \$266,288, depending on the ACLs selected by the Council. The commercial value would be between value between \$25,007 and \$26,363 if 9.9 percent of catch was sold, and \$126,296 to \$133,144 if 50 percent was sold (Table 20). For both Alternatives 2b and 2c, actual potential revenue could be higher because there is no ACL for *E. carbunculus* and *P. filamentosus*, and catch of these species is therefore not included in this analysis.

Alternative 2c sets ACLs for the nine assessed species that are lower than those set under Alternative 2b. However, even if the ACLs were to be set at a level that incurred a risk of overfishing that was 10 percent lower than that indicated by the P* and SEEM analyses, average annual catch in 2019–2021 did not exceed 42 percent of the ACLs proposed under Alternative 2c for any of the 9 assessed BMUS. Although it is unlikely that the fishery would catch the full ACLs based on recent performance, Alternative 2c would lower potential economic benefits compared to Alternative 2b.

Alternatives 2b and 2c will increase catch limits above those set under the no action Alternative under the current rebuilding plan (i.e. 5000 lb for the bottomfish complex and associated AMs), enabling greater utilization of the bottomfish resource while maintaining a sustainable fishery. Alternatives 2b and 2c set single-species catch limits, which would allow fishers to switch between target species if one species is at or near its ACL, rather than limiting access to the BMUS complex as a whole. This would allow fishers to continue to harvest BMUS even if one species reaches its ACL. Compared to Alternative 1 (the no action Alternative), Alternatives 2b and 2c will allow greater utilization of the complex, greater economic benefits, and greater availability of fish for social and cultural practices. Therefore, we do not we expect this alternative to have an effect in the short- or long-term on environmental justice, including subsistence fisheries and consumption.

AMs under the rebuilding plan were designed to rebuild an overfished stock, rather than prevent overfishing of a healthy stock. For this reason, under the current rebuilding plan, NMFS would close Federal waters to fishing if the ACL was projected to be reached, and close Federal waters indefinitely if the ACL was exceeded. Under Alternatives 2b and 2c, an overage adjustment would be used to mitigate the effects of overfishing if the three-year average catch for one of the nine assessed species exceeded the ACL. This overage adjustment would only apply to species

for which catch exceeded the ACL. This would allow fishers to continue harvesting BMUS species, providing greater economic opportunity, more fish for use in subsistence or cultural practices, and greater year-to-year consistency in the harvest of the fishery than is currently available under the rebuilding plan. Over time, continued sustainable management of the fishery under Alternative 2b or Alternative 2c may lead to minor beneficial effects for each of the BMUS due to the change to single-species management from complex level management. This in turn would positively impact both commercial profit and cultural practices which utilize that BMUS.

4.4.3 Effects on Management Setting

The proposed ACLs and AMs under Alternatives 2b and 2c would not require a change to monitoring or fishery data collection. NMFS will continue to evaluate catch data in collaboration with local resource management agencies and the Council (Section 1.6). No changes to the role of law enforcement agents or the USCG would be required in association with implementing the proposed management action. Under these Alternatives, if landings exceed the ACL for any BMUS, NMFS would implement the post-season AM to reduce the ACL for that BMUS by the amount of the overage in the subsequent year. NMFS would not require an additional action by the Council to implement the overage adjustment, but this action would require administrative resources by NMFS to change the ACL.

NMFS tracks catch against the ACL on an individual-species basis and reports stock status for BMUS to the SIS as individual species, and would continue to do so under either Alternative 2b or Alternative 2c. Stock status for *E. carbunculus* is reported as a complex with *E. coruscans* and stock status for *P. filamentosus* is reported as a complex with *P. flavipinnis*.

Alternatives 2b and 2c would not conflict with or reduce the efficacy of existing bottomfish resource management by any local resource management agency, NMFS, or the Council. Additionally, the proposed management measures would also not conflict with ACL and AM implementations for the other Western Pacific bottomfish fisheries in the CNMI, Guam, or Hawai'i because these fisheries are geographically separated. Fishermen would need to continue to comply with existing laws, learn about the new single-species ACLs, and comply with the single-species catch limits.

4.5 Potential Cumulative Effects of the Alternatives

Cumulative effects refer to the 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 agency (federal or non-federal) or person undertakes such other actions. Further, cumulative effects can result from individually minor but collectively significant actions taking place over a period of time. The cumulative effects 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 past, present and reasonably foreseeable actions on that same resource to determine the overall, or cumulative, effects on that resource.

Past, present and reasonably foreseeable management actions for the American Samoa bottomfish fishery that may relate to the action include:

- Managing the fishery as a complex since 2012 with catch limits and accountability measures intended to prevent effects of the fishery exceeding a catch limit.
- The American Samoa bottomfish fishery has been managed under a rebuilding plan since 2022.
- Ongoing monitoring of the fishery and ACL adjustments if the three-year average catch of a BMUS exceeds its ACL under Alternatives 2a-2c. Monitoring of the fishery would continue under all Alternatives, though in-season monitoring under the current rebuilding plan would be required only under the no action alternative. Monitoring under all alternatives would be used to inform required annual reports on Federal fishery performance (e.g., WPFMC 2021). The fishery has been closely monitored for decades and managed under catch limits and accountability measures since 2012, and that monitoring and management would continue under the action.
- Annual review of the fishery performance by the SSC and the Council; including review of catch limits and any modifications that may be called for in light of new information. This annual review would not change under any of the action alternatives.

Other reasonably foreseeable management actions that may relate to the proposed action:

- The Council is expected to continue to recommend ACLs for a number of MUS in the Hawaii and Mariana FEPs, including Deep 7 bottomfish, uku, deepwater shrimp, precious corals, and Kona crab in Hawaii; and bottomfish in Guam and the CNMI. These fisheries have been managed using ACLs and AMs since 2007 for Deep 7 bottomfish and 2012 for the remaining MUS. The American Samoa bottomfish fishery does not overlap with these fisheries or pelagic fisheries in American Samoa to any extent such that management measures under consideration in the American Samoa bottomfish fishery would result in more fishing in these other fisheries or in pelagic fisheries. Discontinuation of the rebuilding plan and setting ACLs in American Samoa is therefore unlikely to affect the other Pacific Island fisheries. Because these fisheries have a history of management under catch limits, they do not have unknown or uncertain impacts, and do not interact substantially with the American Samoa bottomfish fishery. For this reason, the impacts of the action can be considered separately from the ACLs and AMs for other Pacific Island fisheries.
- NOAA has proposed to designate marine portions of the Pacific Remote Island Marine National Monument and the U.S. EEZ around the Pacific Remote Island Areas as a national marine sanctuary to provide comprehensive and coordinated management and to protect nationally significant biological, cultural, and historical resources. The American Samoa bottomfish fishery is a nearshore fishery and it is geographically distinct from the areas proposed for the Sanctuary.

Relevant external factors

- A number of factors have the potential to affect participation in the fishery. Factors may include, but are not limited to, high fuel costs, high costs of other equipment and supplies, and costs of living that affect time available to fish, and natural disasters that

have reduced the number of fishermen in the fishery. The effect of these factors is that, although it is speculative, we do not anticipate a large expansion in bottomfish fishing in the scope of time covered by this EA, and we will not refer to these factors in the cumulative effects analysis.

4.5.1 Cumulative Effects Related to Effects on Target and Non-Target Stocks

Cumulative Effects on Target Species

Under the no action Alternative, the fishery would continue to operate under the rebuilding plan. This Alternative would constrain the fishery to the 5,000 lb catch limit. If the catch limit is reached, or is projected to be reached, NMFS would close the fishery in Federal waters around American Samoa. If the ACL is exceeded, the fishery would be closed in Federal waters until a coordinated management approach is developed that ensures catch in both Federal and territorial waters can be maintained at levels that allow the stock to rebuild.

Under Alternatives 2a through 2c, the Council would recommend and NMFS would discontinue the rebuilding plan (NMFS 2022) and implement ACLs and AMs for the American Samoa bottomfish fishery in fishing years 2024 through 2026. The stock assessment calculated the potential sustainability and impacts to the nine assessed bottomfish stock if the ACL is specified for the next three years assuming the entire ACL is caught (Nadon et al. 2023). Though this EA focuses on implementing ACLs for fishing years 2024–2026, the 2023 stock assessment on which these recommendations are based contains projections for catch levels and associated probability of overfishing through fishing year 2024–2028 (Nadon et al. 2023). If necessary, NMFS and the Council may use this stock assessment as a basis for recommending ACLs for 2027–2028, given consistency with acceptable levels of risk that were identified during P* and SEEM analyses. Based on the recent performance of the fishery, annual catches are expected to remain below the proposed ACLs in Alternatives 2a, 2b and 2c, so the actual probability of overfishing would likely be less than is projected in the stock assessment.

The proposed ACLs under Alternatives 2b and 2c include consideration of both scientific and management uncertainties, and consider potential social, economic, and ecological effects. Therefore, the ACLs incorporate buffers to provide additional assurance of sustainability, and we do not anticipate that these Alternatives would have a risk of large unknown effects that could result in large adverse cumulative effects. The Council and its SSC applied a quantitative method to develop the P* estimates. P* was computed based on BSIA and including scientific uncertainty for four dimensions: 1) assessment information, 2) assessment uncertainty, 3) stock status, and 4) productivity and susceptibility (NMFS 2011). Building in this buffer reduces the potential for large adverse cumulative effects of the proposed ACLs and AMs on sustainability of the fishery. The Council and its SSC also applied a qualitative analysis related to management uncertainties considering four factors: 1) Social, 2) Economic; 3) Ecological, and 4) Management uncertainty considerations (NMFS 2011). This information is incorporated into the ACLs under Alternatives 2b and 2c by subtracting SEEM scores from the ABC. Building in this buffer reduces the potential for large adverse cumulative effects of the proposed ACLs and AMs on sustainability of the fishery due to any of the factors considered in the SEEM analysis.

Cumulative Effects on Non-target and Bycatch Species

Bycatch in the American Samoa bottomfish fishery is negligible (NMFS 2022) and is not believed to adversely affect any non-target fishery species (Section 3.1). It is not expected that substantial changes would occur in the fishery under any proposed Alternative, so effects on other species are not anticipated from implementation of an Alternative. NMFS and the Council would also continue to monitor catch of ECS and other non-target species to evaluate changes to catch that could indicate management measures are required.

4.5.2 Cumulative Effects Related to Effects on Protected Resources

Consultations under the ESA have determined that bottomfish fishing activities in American Samoa are not likely to adversely affect any ESA-listed species. Under all Alternatives under consideration, fishing is expected to remain within levels considered during these consultations, and no additional effects to protected species are expected (Section 3.2). The fishery would continue to be authorized and conducted in accordance with Section 7 of the ESA and the MMPA (NMFS 2002). The analysis of effects of the fishery under each of the Alternatives found that the fishing is not likely to have significant effects on the survival or recovery of any listed species, largely because the fishery does not interact with these listed species, and because vessel collisions with sea turtles are far below levels that would jeopardize survival and recovery. NMFS analysis of effects on ESA- and MMPA-listed species took into consideration outside actions that affect the same species. In general, management of the fishery under the full suite of proposed management measures, including an ACL and AM, would not change the fishery in any way that is likely to have the potential for large and adverse cumulative effects on listed species.

4.5.3 Cumulative Effects Related to Fishery Participants and Communities

Management of the American Samoa bottomfish fishery using ACLs and AMs is not known to have large adverse effects on the socio-economic setting. Discontinuing the rebuilding plan and the implementation of ACLs and AMs may lead to a slight increase in catch and revenue, but overall participation in the fishery is not expected to change substantially. Social and economic considerations were incorporated into the range of Alternatives analyzed here.

Previous management of the fishery under catch limits and accountability measures has not constrained fishing and so did not affect the socioeconomic setting related to the fishery. Proposed management under catch limits based on the 2023 American Samoa bottomfish stock assessment and P* and SEEM analyses, is not expected to change this condition because none of the Alternatives under consideration are expected to result in changes to the operation of the fishery or substantially affect associated communities. Because there are no social, cultural or economic effects anticipated from the proposed action on fishery participants or communities, this action would not result in additive or combined effects that may result from designation of a national marine sanctuary in the Pacific Remote Island Areas.

4.5.4 Cumulative Effects Related to Climate Change

Although there are no specific studies examining the potential effects of climate change on Pacific Island bottomfish, changes in the environment from global climate change have the potential to affect bottomfish fisheries. Effects of climate change may include sea level rise,

increased intensity or frequency of coastal storms and storm surges, changes in rainfall (more or less) that can affect salinity nearshore or increase storm runoff and pollutant discharges into the marine environment, increased temperatures resulting in coral bleaching, and temperature mediated responses in some marine species (IPCC 2007). The effects from climate change may occur slowly and be difficult to discern from other effects. Climate change has the potential to adversely affect some organisms, while others could benefit from changes in the environment. Increased carbon dioxide uptake can increase ocean acidity which can disrupt calcium uptake processes in corals, crustaceans, mollusks, reef-building algae, and plankton, among other organisms (Houghton et al. 2001; The Royal Society 2005; Caldeira and Wickett 2005; Doney 2006; Kleypas et al. 2006). Climate change can also lead to changes in ocean circulation patterns, which can affect the availability of prey, migration, survival, and dispersal (Buddemeier et al. 2004). Damage to coastal areas due to storm surge or sea level rises as well as changes to catch rates, migratory patterns, or visible changes to habitats are among the most likely changes.

The efficacy of the proposed Alternatives in providing for sustainable fishing levels for bottomfish is not expected to be adversely affected by climate change. Recent catches and biological status of the stocks informed the development of the Alternatives, and climate change effects, if any, would be indirectly reflected in those statistics. Monitoring of bottomfish catches and stocks would continue regardless of which Alternative is selected, and management could be adjusted in the future if environmental factors were found to be affecting the stocks. Lastly, the proposed Alternatives have a negligible impact on greenhouse gas emissions due to the small size and localized range of the fishery. There are no expected effects from the proposed Alternatives on climate change.

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6 Draft Proposed Regulations

This section contains the regulations necessary to implement the conservation and management measures described in the regulatory amendment, based on the preferred Alternative selected by the Council at the 197th meeting in December 2023. Additions to the existing regulatory language are shown in underline, and deletions are shown in strikethroughs.

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

PART 665 – FISHERIES IN THE WESTERN PACIFIC

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

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

2. Revise § 665.103 to read as follows:

§ 665.103 Prohibitions.

In addition to the general prohibitions specified in § 600.725 of this chapter and § 665.15, it is unlawful for any person to ~~do any of the following~~: fish for American Samoa bottomfish MUS or ECS using gear prohibited under § 665.104.

~~(a) Fish for American Samoa bottomfish MUS or ECS using gear prohibited under § 665.104.~~

~~(b) Fish for or possess any American Samoa Bottomfish MUS as defined in § 665.101 after a closure of the fishery in violation of § 665.106.~~

~~(c) Sell or offer for sale any American Samoa Bottomfish MUS as defined in § 665.101 after a closure of the fishery in violation of § 665.106.~~

3. Amend § 665.106 by revising paragraph (a), (b) and (c); and removing paragraphs (d) and (e) to read as follows:

§ 665.106 American Samoa annual catch limits (ACL).

(a) Annual Catch Limits (ACL): In accordance with § 665.4, the ACLs for American Samoa bottomfish MUS during fishing years 2024, 2025 and 2026 is 5,000~~is~~ are as follows:

Table 1 to paragraph (a)

<u>Species</u>	<u>Samoan name</u>	<u>Proposed ACL (lb)</u>
<u><i>Aphareus rutilans</i></u>	<u>Palu-gutusaliva</u>	<u>8,554</u>
<u><i>Aprion virescens</i></u>	<u>Asoama</u>	<u>4,872</u>
<u><i>Caranx lugubris</i></u>	<u>Taufauli</u>	<u>3,086</u>
<u><i>Etelis coruscans</i></u>	<u>Palu-loa</u>	<u>4,872</u>
<u><i>Lethrinus rubrioperculatus</i></u>	<u>Filoa-paomumu</u>	<u>8,554</u>
<u><i>Lutjanus kasmira</i></u>	<u>Savane</u>	<u>16,645</u>
<u><i>Pristipomoides flavipinnis</i></u>	<u>Palu-sina</u>	<u>2,579</u>
<u><i>Pristipomoides zonatus</i></u>	<u>Palu-ula</u>	<u>1,521</u>
<u><i>Variola louti</i></u>	<u>Velo</u>	<u>2,205</u>

b) Post-season Accountability Measure: If the average total catch in the most recent three years exceeds the ACL for any species, the Regional Administrator will make an overage adjustment in a separate rulemaking to reduce the ACL for that species by the amount of the overage for the subsequent year. All ACLs for species for which the three most recent years of catch did not exceed the ACL will remain unchanged. ~~When NMFS projects the ACL will be reached, the Regional Administrator shall publish a document to that effect in the Federal Register and shall~~

use other means to notify permit holders. The document will include an advisement that the fishery will be closed, beginning at a specified date that is not earlier than seven days after the date of filing the closure notification for public inspection at the Office of the Federal Register, through the end of the fishing year in which the catch limit is reached.

~~(c) Indicator Species: *E. coruscans* will serve as an indicator species for *E. carbunculus* and *P. flavipinnis* will serve as an indicator species for *P. filamentosus*. *E. carbunculus* will be subject to the post-season AM if *E. coruscans* reaches the ACL. *P. filamentosus* will be subject to the post-season AM if *P. flavipinnis* reaches the ACL. There are no separate ACLs and AMs for *Etelis carbunculus* and *Pristipomoides filamentosus*. If the ACL is exceeded in any fishing year, the Regional Administrator shall publish a document to that effect in the **Federal Register** and shall use other means to notify permit holders. The document will include an advisement that the fishery will be closed, beginning at a specified date that is not earlier than seven days after the date of filing the closure notification for public inspection at the Office of the Federal Register. The fishery will remain closed until such time that a coordinated approach to management is developed that ensures catch in both Federal and territorial waters can be maintained at levels that allow the stock to rebuild or the rebuilding plan is modified based on the best scientific information available.~~

~~(d) On and after the date the fishery is closed as specified in paragraph (b) or (c) of this section, fishing for and possession of American Samoa bottomfish MUS is prohibited in the American Samoa fishery management area, except as otherwise authorized by law.~~

~~(e) On and after the date the fishery is closed as specified in paragraph (b) or (c) of this section, the sale, offering for sale, and purchase of any American Samoa bottomfish MUS caught in the American Samoa fishery management area is prohibited.~~

Appendix A. Regulatory Impact Review

Regulatory Impact Review

Discontinue Rebuilding Plan and Implement New Annual Catch Limits and Accountability Measures for the American Samoa Bottomfish Fishery in 2024-2026

(RIN 0648-BN03)

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 is reflected in the following statement:

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

To comply with E.O. 12866, the National Marine Fisheries Service (NMFS) prepares an RIR for regulatory actions that are of public interest. The RIR provides an overview of the problems, policy objectives, and anticipated impacts of regulatory actions. The proposed action would discontinue the current stock rebuilding plan and implement annual catch limits (ACL) and accountability measures (AM) for bottomfish in the U.S. Exclusive Economic Zone around American Samoa for 2024, 2025, and 2026.

2. Problem Statement and Management Objective

The purpose of this action is to comply with the requirements of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), the American Samoa Fishery Ecosystem Plan (FEP), and regulations that require implementation of ACLs and AMs for American Samoa bottomfish management unit species (BMUS). Specifically, the proposed action would discontinue the rebuilding plan for American Samoa BMUS and the associated multi-species ACL and AMs, and implement new single species ACLs and AMs for 2024, 2025, and 2026 based on the results of the 2023 benchmark stock assessment, considered the best scientific information available (BSIA) for the management of American BMUS. The management objective of the proposed action is to prevent overfishing and to provide for long-term sustainability of the fishery resources while allowing fishery participants to continue to benefit from their utilization.

3. Description of the Fishery and Fishing Community

More details on the fishery and the fishing community can be found in the 2022 Annual Stock Assessment and Fishery Evaluation (SAFE) Report for the American Samoa FEP, as well as Sections 1.4.1 and 3.4 of the Environment Assessment (EA) associated with this action.

During the first half of the 1980's, participation in American Samoa's bottomfish fishery had increased quickly, but by 1988 bottomfish fishing in American Samoa began to decline as skilled commercial fishermen shifted focus from bottomfish fishing to trolling and small-scale longlining for pelagic species like albacore. Since then, revenues and profits have been adversely affected by multiple factors including hurricanes, rising fuel costs, and a shift in market demand toward lower price bottomfish imports. Available information on recent participation in the fishery vary, but indicate that the fishery is relatively small and utilizes multiple methods to catch fish. Specifically, fishing methods are primarily boat-based bottomfish handline gear,

mixed bottomfish-troll vessels, or spearfish gear (boat-based). The 2022 SAFE Report estimated that nine unique vessels landed BMUS in 2022: four bottomfishing vessels, two mixed bottomfish-troll vessels, and three using spearfishing gear (WPRFMC 2023a). These participants are primarily non-commercial fishermen with declining number of participants – 27 vessels fished for BMUS in 2016 compared to nine in 2022, and the decline in participation was likely exacerbated by the onset of the COVID-19 pandemic in 2020.

The fishery has been managed with ACLs or interim catch limits (ICLs) and AMs since 2012. Catch from both territorial waters and Federal waters counts towards the catch limits; however, the existing data reporting systems does not specify how much bottomfish catch comes from territorial versus Federal waters. Until 2017, the ACL for this fishery had ranged from 99,200 lb (2012) to 106,000 lb (2016 and 2017) and far exceeded catch. The fishery was considered to be harvesting sustainably until the 2019 stock assessment. In 2020–2021, the fishery was subject to an ICL of 13,000 lb while the Council developed a rebuilding plan (86 FR 32361, June 21, 2021). The rebuilding plan implemented an ACL of 5,000 lb effective June 1, 2022 (87 FR 25590, May 2, 2022), which remains the ACL currently in place.

Between 2003 and 2020, the percent pounds of bottomfish catch that was later sold varied widely, ranging from 4 to 73 percent. Based on creel surveys, fishermen caught 11,399 lb of bottomfish in 2019, 7,697 lb in 2020, and 2,063 lb of bottomfish in 2021, and fishermen sold 9.9 percent of catch from 2017–2019 (commercial landings for 2020 are not considered representative due to the onset of the COVID-19 pandemic are not available for 2021 and 2022 because of data confidentiality). In 2022, the year in which the rebuilding plan was implemented, fishermen caught 2,583 lb of bottomfish. In 2019, the last full year prior to the onset of the pandemic and its effects on markets, the average price per pound was \$4.24, which adjusted for 2022 dollars, would be \$5.09 (WPRFMC 2023a). The most recent American Samoa cost-earnings survey, which was administered in 2021, reported that bottomfish fishermen responded that they sold about 50 percent of their bottomfish catch, kept 30 percent for subsistence, and gave away 20 percent of their catch (Dombrow and Hospital 2023).

The demand for bottomfish in American Samoa varies depending on the need for fish at government and cultural events, and fishermen may switch to bottomfish fishing during periods when longline catches or prices are low. Fishing grounds in Federal waters around American Samoa are also important for the harvest of deep-water snappers used for chiefly position entitlements and *fa'a lalave* ceremonies (e.g., funerals, weddings, births, and special birthdays).

4. Description of the Alternatives

This section briefly describes the status quo and the action alternatives. Section 2.3 of the EA provides more details on each alternative.

4.1 Alternative 1: No Action – Continue the rebuilding plan (Status Quo)

Under Alternative 1, the Council would take no action, which would continue the current rebuilding plan. This Alternative does not use new information provided by the 2023 benchmark stock assessment, and therefore, does not comply with National Standard (NS)-2 of the Magnuson-Stevens Act, which requires that management decisions be based on BSIA.

4.2 Alternative 2: Discontinue the rebuilding plan

Alternative 2 and the three sub-Alternatives would discontinue the American Samoa bottomfish rebuilding plan and apply aggregate or single-species ACLs and AMs for the 2024–2026 fishing years. For all Alternatives under Alternative 2 (Alternatives 2a through 2c), as an AM, if the average catch over the most recent three years were to exceed the ACL(s), the ACL(s) in the subsequent year would be reduced by the amount of the overage. Only post-season AMs are practicable in the American Samoa bottomfish fishery, given the limited capability of real time, in-season monitoring. As an additional performance measure specified in the FEP, if catches exceed an ACL more than once in a four-year period, the Council must re-evaluate the ACL process, and adjust the system, as necessary, to improve its performance and effectiveness.

4.2.1 Alternative 2a: Implement an aggregate ACL of 52,888 lb and a post-season AM for fishing years 2024–2026 (Council Preliminarily Preferred Alternative)

Under Alternative 2a, a single aggregate ACL of 52,888 lb would apply to the nine American Samoa BMUS stocks assessed in the 2023 stock assessment. The aggregate ACL would be the sum of catch limits derived from the P* and SEEM analyses for these nine species, but would not account for *E. carbunculus* and *P. filamentosus*, as they were not assessed in the 2023 benchmark stock assessment. Using the information from the 2023 stock assessment to create combined or aggregate metrics and catch limits under this Alternative does not conform to NS-2 because it does not use BSIA for management in an appropriate manner. Furthermore, this Alternative also does not conform to the requirements under NS-1, in that the ACL exceeds the ABCs set by the SSC and it does not prevent the overfishing of the individual bottomfish species. In consideration of this, the Council did not choose to recommend this Alternative at Final Action, despite preferring it during initial action.

4.2.2 Alternative 2b: Implement nine single-species ACLs and post-season AMs for fishing years 2024–2026 based on the results of the P* and SEEM analyses (Council Preferred Alternative)

Under Alternative 2b, for 2024, 2025, and 2026 single-species ACLs would apply to each of the nine assessed American Samoa BMUS based analysis of their respective scientific uncertainty (P*) and social, economic, ecological, and management considerations (SEEM) (Table 1). ACLs and AMs would be tracked and implemented independently for each species, but sales and price information are not available for individual species. For consideration in economic analyses, the total catch authorized under this alternative would be 52,888 lb, and the price per pound is \$5.09. This alternative would also establish *E. coruscans* as an indicator species for *E. carbunculus* and *P. flavipinnis* as an indicator species for *P. filamentosus*. Separate ACLs and AMs would not be implemented for *E. carbunculus* and *P. filamentosus*. Instead, they would be subject to the post-season AM based on monitoring of catch of the respective indicator species. This Alternative would appropriately use the results of the 2023 bottomfish stock assessment, which is considered BSIA.

Table 1: Single-species ACLs for the nine assessed BMUS

BMUS	Samoan name	Proposed ACL (lb)
<i>Aphareus rutilans</i>	Palu-gutusaliva	8,554
<i>Aprion virescens</i>	Asoama	4,872
<i>Caranx lugubris</i>	Tafauli	3,086
<i>Etelis coruscans</i>	Palu-loa	4,872
<i>Lethrinus rubrioperculatus</i>	Filoa-paomumu	8,554
<i>Lutjanus kasmira</i>	Savane	16,645
<i>Pristipomoides flavipinnis</i>	Palu-sina	2,579
<i>P. zonatus</i>	Palu-ula	1,521
<i>Variola. louti</i>	Velo	2,205
Sum of ACLs		52,888

4.2.3 Alternative 2c: Implement nine single-species ACLs lower than the results of the P* and SEEM analyses for fishing years 2024–2026

Under Alternative 2c, more conservative single-species ACLs (compared to Alternative 2b) would apply to each of the nine assessed American Samoa BMUS for 2024, 2025, and 2026 for the nine American Samoa BMUS assessed in the 2023 stock assessment. Table 2 provides four sets of catch limits considered by the Council as potential options under Alternative 2c. The Council would also establish *E. coruscans* as an indicator species for *E. carbunculus* and *P. flavipinnis* as an indicator species for *P. filamentosus*. Separate ACLs and AMs would not be implemented for *E. carbunculus* and *P. filamentosus*. Instead, they would be subject to AMs based on monitoring of catch of the indicator species. Alternative 2c provides a more precautionary approach to account for scientific or management uncertainties not identified in the P* and SEEM analyses. This Alternative would appropriately use the results of the 2023 bottomfish stock assessment which is considered BSIA.

Table 2: Possible ACLs based on percent reductions from the probability of overfishing as determined by the P* and SEEM analyses for each species. ACLs are expressed in lb. The numbers in parentheses represent the probability of overfishing.

BMUS	Samoan name	ACL at P*	ACL at P* -2%	ACL at P* - 5%	ACL at P* -8%	ACL at P* - 10%
<i>A. rutilans</i>	Palu-gutusaliva	8,554 (35)	8,378 (33)	8,069 (30)	7,782 (27)	7,584 (25)
<i>A. virescens</i>	Asoama	4,872 (36)	4,850 (34)	4,784(31)	4,740 (28)	4,696 (26)
<i>C. lugubris</i>	Tafauli	3,086 (37)	3,064 (35)	3,020 (32)	2,976 (29)	2,954 (27)
<i>E. coruscans</i>	Palu-loa	4,872 (35)	4,784 (33)	4,652 (30)	4,519 (27)	4,431 (25)
<i>L. rubrioperculatus</i>	Filoa-paomumu	8,554 (37)	8,510 (35)	8,444 (32)	8,378 (29)	8,333 (27)
<i>L. kasmira</i>	Savane	16,645 (38)	16,491(36)	16,226 (33)	15,961 (30)	15,785(28)
<i>P. flavipinnis</i>	Palu-sina	2,579 (36)	2,535 (34)	2,469 (31)	2,403 (28)	2,359 (26)
<i>P. zonatus</i>	Palu-ula	1,521 (36)	1,521 (34)	1,477 (31)	1,455 (28)	1,433 (26)
<i>V. louti</i>	Velo	2,205 (36)	2,183 (34)	2,138 (31)	2,072 (28)	2,050 (26)
Sum of ACLs		52,888	52,316	51,279	50,286	49,625

5.0 Analysis of Alternatives

This section describes potential economic effects and evaluates the impacts of the action alternatives relative to the status quo alternative. In developing the analyses of impacts (baseline as well as the implementation of action alternatives), NMFS uses the average 2022 adjusted price for bottomfish of \$5.09 per lb. Table 3 summarizes potential catch and revenue under each Alternative. It also summarizes potential amount of catch sold and corresponding revenue given assumptions on non-commercial catch.

5.1 Alternative 1: No Action – Continue the rebuilding plan

Under Alternative 1, the fishery would continue to operate under the rebuilding plan with a catch limit of 5,000 lb. If NMFS projects that the ACL will be reached during a fishing year, NMFS will close the fishery in Federal waters through the end of the fishing year. After the fishery is closed, fishing for and possession of American Samoa BMUS in Federal waters is prohibited and the sale, offering for sale, and purchase of any American Samoa BMUS from Federal waters would be prohibited. As a post-season AM, if the catch limit is exceeded the fishery would be closed in Federal waters until a coordinated approach to management in territorial waters is developed. If the rebuilding plan were to continue, it is expected that the fishery would operate similarly as it had in 2022, during which fisherman caught an estimated 2,583 lb of bottomfish.

If that pattern continues, the fishery is not expected to reach the ACL or substantially change the way it fishes with respect to fishing gear, fishing effort, participation, or intensity, but may change slightly with respect to total catch and areas fished, with the fishermen who would normally choose to fish in Federal waters being affected more adversely.

If fishing participation returned closer to pre-pandemic levels, the sectors of the fishery which rely on Federal waters may be constrained by the 5,000 lb catch limit and AMs under the rebuilding plan. AMs under the rebuilding plan are designed to rebuild an overfished stock, rather than prevent overfishing of a healthy stock. For this reason, NMFS would close Federal waters to fishing if the ACL was reached or if the ACL was projected to be reached. This would unnecessarily prohibit fishers from accessing BMUS resources in Federal waters, and catch of those species that are primarily harvested in Federal waters may be constrained. However, 85 percent of BMUS habitat occurs in territorial waters, so it is expected that most fishing occurs in territorial waters, and that some fishing that would have occurred in Federal waters would be displaced to territorial waters in the event of a closure, without complementary management (and corresponding closure) by the American Samoa Division of Marine and Wildlife Resources.

Assuming that the full ACL under Alternative 1 was caught and fishermen sold their catch for \$5.09 per lb, the total potential catch value would be \$25,450. NMFS anticipates that fishery participants would sell as little as 9.9 percent and as much as 50 percent of their bottomfish catch with remaining catch used for subsistence or sharing within the community. This would suggest that if catch is 5,000 lb, the expected amount sold and revenue earned would range between 495 lb (\$2,520) and 2,500 lb (\$12,725) fleetwide under Alternative 1.

Under Alternative 1, NMFS and the Council would continue to monitor catches of all 11 BMUS against the complex-level ACL. The in-season AM would require NMFS to close the fishery in Federal waters if the ACL was projected to be reached. NMFS would not require an additional action by the Council to close Federal waters, but a closure would require administrative resources by NMFS to close the fishery and enforce the closure. If the fishery were closed in American Samoa, NMFS Office of Law Enforcement (OLE) and the U.S. Coast Guard (USCG) would be responsible for enforcing the closure in Federal waters. Without sighting a vessel that is actively fishing for bottomfish in Federal waters, NMFS OLE and the USCG may be unable to determine if BMUS were harvested in territorial or Federal waters, so effective enforcement may require increased effort by USCG, NMFS OLE or territorial agencies. This would require significant time and investment by NMFS and/or the USCG. The application of the performance standard to close the fishery in Federal waters in subsequent years until a new management approach is developed, would similarly require resources by NMFS to enact and enforce the closure.

5.2 Alternative 2: Discontinue the rebuilding plan

5.2.1 Alternative 2a: Implement an aggregate ACL of 52,888 lb and a post-season AM for fishing years 2024–2026

Under Alternative 2a, fishery participants would be able to catch up to 52,888 lb of bottomfish, which is more than ten times higher than the ACL under the rebuilding plan. The fishery is not likely to reach that level of catch if the fishery performance is similar to fishery performance

over the past 10 years. The average annual BMUS catch (for all eleven species) from 2020–2022 was 4,114 lb, and 10,717 lb from 2012–2022. Even if the fishery performs close to the highest recent catch of 33,307 lb during the 2015 fishing year, the fishery would continue with no overage adjustment for the complex. If the three-year average catch of BMUS in the fishery were to exceed the 52,888 lb aggregate ACL, NMFS would reduce the ACL in the next fishing year by the amount of the overage.

Assuming that the full ACL under Alternative 2a was caught and fishermen sold their catch for \$5.09 per lb, the total potential catch value would be \$269,200. NMFS anticipates that fishery participants would sell as little as 9.9 percent and as much as 50 percent of their bottomfish catch with remaining catch used for subsistence or sharing within the community. This would suggest that if fishery participants catch 52,888 lb, the expected amount sold and revenue earned would range between 5,236 lb (\$26,651) and 26,444 lb (\$134,600) fleetwide under Alternative 2a. Alternative 2a would provide bottomfish fishery participants a higher amount of catch for commercial and non-commercial use within the authorized catch limit, compared to Alternative 1.

The proposed ACL and AM under Alternative 2a would not require significant a change to monitoring or fishery data collection. NMFS will continue to monitor catch data in collaboration with the American Samoa Division of Marine and Wildlife Resources (DMWR) and the Council and evaluate catch against the ACL based on an aggregate total of catch of individual-species. Alternative 2a would not conflict with or reduce the efficacy of existing bottomfish resource management by DMWR. No changes to the role of law enforcement agents or the USCG would be required in association with implementing Alternative 2a. Under this Alternative, if landings exceed the aggregate ACL, NMFS and the Council would implement the post-season AM. NMFS would not require an additional action by the Council to reduce the ACL by the amount of the overage in a subsequent year, but this action would require administrative resources by NMFS to change the ACL. If landings did exceed a single-species OFL, but did not exceed the aggregate ACL, then NMFS and the Council would not have the regulatory ability to prevent or remediate the overfishing of individual species.

5.2.2 Alternative 2b: Implement nine single-species ACLs and post-season AMs for fishing years 2024–2026 based on the results of the P* and SEEM analyses (Council Preferred Alternative)

Under Alternative 2b, catch would be monitored against ACLs on a single-species basis and would increase the total allowable landings in the bottomfish fishery over the current rebuilding plan. The ACLs would be applied to the average catch for each species over the most recent three years. Average catch of *A. virescens* in 2019–2021 was the closest to its corresponding ACL, at 41 percent of the proposed ACL, followed by *C. lugubris* and *E. coruscans* at 23 percent and 21 percent, respectively.

The catch of *A. virescens* did exceed the proposed ACL (4,872 lb) in 2015 (5,628 lb) and 2016 (6,598 lb) and the catch of *E. coruscans* exceeded the proposed ACL (4,872 lb) in 2014 (5,088 lb) and 2016 (6,748 lb). The three-year average catch for each of these species would also have exceeded the proposed ACL for *A. virescens* in 2016 and 2017 and the proposed ACL for *E. coruscans* in 2016. If the fishery were to continue to operate as it has in recent years, the fishery

would not likely exceed the proposed ACLs for any single species under Alternative 2b, and the community would continue to be able to access the socioeconomic and cultural benefits of the fishery. If the average three-year catch were to reach or exceed the ACL for any one species, the post-season AM would be applied only to that species, but the fishery could continue to catch all other BMUS according to their proposed ACLs under Alternative 2b. If this happens more than once in a four-year period, the Council would reassess the AMs for that species and could implement other restrictions on catch, including size limits, or closed seasons or areas. Assuming that the full ACL under Alternative 2b was caught and fishermen sold their catch for \$5.09 per lb, the total potential catch value would be \$269,200. Potential revenue and non-commercial use of catch would be similar under Alternative 2b and Alternative 2a, so the expected amount sold and revenue earned would range between 5,236 lb (\$26,651) and 26,444 lb (\$134,600).

Monitoring fishery data collection and enforcement would likely be similar to Alternative 2a. There could be a slight increase in management costs related to the increased chance of exceeding a single species ACL compared to exceeding the aggregate BMUS ACL.

NMFS tracks catch against the ACL on an individual-species basis, and reports stock status for BMUS to the SIS as individual species, and would continue to do so under either Alternative 2b or Alternative 2c. Stock status for *E. carbunculus* is reported as a complex with *E. coruscans* and stock status for *P. filamentosus* is reported as a complex with *P. flavipinnis*.

5.2.3 Alternative 2c: Implement nine single-species ACLs lower than the results of the P* and SEEM analyses for fishing years 2024–2026

The ACLs set under Alternative 2c would increase the total allowable landings in the bottomfish fishery over the current rebuilding plan. The sum of the proposed single-species ACLs would range from 49,625 lb to 52,316 lb, depending on the selective level of conservative management compared to Alternative 2b. Under Alternative 2c, catch would be monitored against the ACLs on a single-species level.

If the fishery were to continue to operate as it has in recent years, NMFS anticipates that the fishery would not exceed the proposed ACLs and the community would have continued access to socioeconomic and cultural benefits of the fishery throughout the year. The average BMUS catch for 2019–2021 for each of the nine assessed BMUS compared to their respective ACLs ranged from three to 41 percent. If the average three-year catch were to reach or exceed the ACL for any one species, the post-season AM would be applied to only that species, but the fishery could continue to catch all other BMUS species according to their proposed ACLs under Alternative 2c. If this happens more than once in a four-year period, the Council would reassess the AMs for that species and could implement other restrictions on catch, including size limits, or closed seasons or areas.

Compared to Alternative 2b, this Alternative is a more conservative approach to setting species-specific catch limits and would lower the potential allowable amount of catch available to the fishing community for each of the BMUS, thus lowering potential revenue, subsistence benefits of the fishery, and amount of fish available for cultural practices. Assuming that the full ACLs under Alternative 2c are caught and fishermen sold their catch for \$5.09 per lb, the total potential catch value would be range from \$252,591 to \$266,288 (see Table 3). NMFS anticipates that

fishery participants would sell as little as 9.9 percent and as much as 50 percent of their bottomfish catch with remaining catch used for subsistence or sharing within the community. Table 3 summarizes the range in expected amount caught and sold as well as potential corresponding revenues under the four scenarios and their corresponding ACLs evaluated under Alternative 2c. Table 3 also summarizes the full potential catch sold and revenue earned under varying assumptions on percent of catch sold (9.9 percent and 50 percent) under each of the ACLs considered under Alternative 2c. Alternative 2c would provide bottomfish fishery participants with a higher amount of potential commercial and non-commercial bottomfish catch and revenue compared to Alternative 1, but lower amount of potential commercial and non-commercial catch and revenue compared to Alternatives 2a and 2b.

Table 3: Potential catch and revenue. Potential commercial bottomfish and revenue under the various scenarios considered under Alternative 2c and varying assumptions on percent of catch sold (9.9 percent and 50 percent).

	Potential Catch	Potential amount sold and revenue (9.9% sold)	Potential amount sold and revenue (50% sold)
<i>Alt 1</i>	5,000 lb/\$25,450	248 lb/\$2,520	2,500 lb/\$12,725
<i>Alt 2a</i>	52,888 lb/\$269,200	5,236 lb/\$26,650	26,444 lb/\$134,600
<i>Alt 2b (Preferred): single-species ACL</i>	52,888 lb/\$269,200	5,236 lb /\$26,650	26,444 lb/\$134,600
<i>Alt 2c: single species ACL at P*-2%</i>	52,316 lb/\$266,288	5,179 lb/\$26,360	26,158 lb/\$133,144
<i>Alt 2c: single species ACL at P*-5%</i>	51,279 lb/\$261,010	5,077 lb/\$25,840	25,640 lb/\$130,505
<i>Alt 2c: single species ACL at P*-8%</i>	50,286 lb/\$255,956	4,978 lb/\$25,340	25,143 lb/\$127,978
<i>Alt 2c: single species ACL at P*-10%</i>	49,625 lb/\$252,591	4,913 lb/\$25,007	24,813 lb/\$126,296

Monitoring fishery data collection and enforcement would likely be similar to Alternative 2a and 2b. There could be a slight increase in management costs related to the increased chance of exceeding a single species ACL compared to exceeding the aggregate BMUS ACL (Alternative 2a) or the higher single species ACLs (Alternative 2b).

6.0 Determination of Significant Regulatory Action

Pursuant to E.O. 12866, as amended by Executive Order (E.O.) 13258, E.O. 13422, and E.O. 14094, a regulation is considered a “significant regulatory action” if it is expected to result in: (1) an annual effect of \$200 million or more (adjusted every three years by the Administrator of the Office of Information and Regulatory Affairs (OIRA) for changes in gross domestic product) 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, territorial, or tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights or obligations of recipients thereof; or (4) raise legal or policy issues for which centralized review would meaningfully further the President’s priorities, or the principles set forth in this executive order, as specifically authorized in a timely manner by the Administrator of OIRA in each case. Based on the information provided above, this regulatory action was determined not to be economically significant for the purposes of E.O. 12866.