WESTERN PACIFIC REGIONAL FISHERY MANAGEMENT COUNCIL

DRAFT

Omnibus Amendment for the Western Pacific Region for Compliance with Standardized Bycatch Reporting Methodology Guidance

Amendment to the Fishery Ecosystem Plan for American Samoa Archipelago

Amendment to the Fishery Ecosystem Plan for the Mariana Archipelago

Amendment to the Fishery Ecosystem Plan for the Hawaii Archipelago

Amendment to the Fishery Ecosystem Plan for the Pacific Remote Island Areas

Amendment to the Fishery Ecosystem Plan for the Pelagic Fisheries of the Western Pacific Region

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Responsible Federal Agency: Pacific Islands Regional Office (PIRO)
National Marine Fisheries Service (NMFS)
National Oceanic & Atmospheric Administration (NOAA)

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Abstract

In 2017, the National Marine Fisheries Service (NMFS) published a final rule providing guidance on the requirement of the MSA that all fishery management plans (FMPs), with respect to any fishery, establish a standardized bycatch reporting methodology (SBRM) used to collect, record, and rerpot bycatch data in a fishery. The final rule established requirements and provides guidance to regional fishery management councils and the U.S. Secretary of Commerce regarding the development, documentation and review of SRBM, and requires that all FMPs be consistent with the new guidance by February 2022. Council staff, in coordination with NMFS, conducted a review of the Council's five Fishery Ecosystem Plans (FEPs) for consistency with the new guidance. The Council at the 186th meeting in June 2021 received a report of the consistency review, which concluded that housekeeping amendments to the FEPs are warranted to update the SBRM tables with the current primary fishery data collection methods for each fishery and remove identification of SBRMs from fisheries that target Ecosystem Component species, and add explanations of how the SBRMs meet the purpose as defined in the 2017 final rule. The Council took initial action recommending development of an omnibus amendment to update the SBRMs and associated descriptions in the FEP for consistency with the 2017 Final Rule, and as identified in the consistency review document. The Council at its 187th meeting will consider final action on the omnibus amendment.

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1 INTRODUCTION

The Western Pacific Regional Fishery Management Council and the National Marine Fisheries Service (NMFS) manage fishing in the Exclusive Economic Zone (EEZ) around US Pacific Islands. The Council and NMFS manage fishing for bottomfish, coral reef ecosystem species, precious corals, and crustaceans in American Samoa, Hawaii, the Mariana Islands (Guam and the Commonwealth of the Northern Marina Islands (CNMI)), and the Pacific Remote Island Areas (PRIA) under the Fishery Ecosystem Plans (FEP) for the American Samoa Archipelago, the Hawaii Archipelago, and the Mariana Archipelago, and the PRIA pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act or MSA). The Council and NMFS also manage fishing for pelagic species in the EEZ around US Pacific Islands and on the high seas under the FEP for Pelagic Fisheries of the Western Pacific Region. The Magnuson-Stevens Act requires the Council to develop fishery management plans (FMP) for each fishery under its area of management authority (i.e., EEZ or federal waters) that requires conservation and management.

The MSA defines bycatch as fish which are harvested in a fishery, but which are not sold or kept for personal use, and includes economic discards and regulatory discards. The definition does not include fish released alive under a recreational catch and release fishery management program (MSA §3(2)). The MSA defines fish as finfish, mollusks, crustaceans, and all other forms of marine animal and plant life other than marine mammals and birds (MSA §3(12)). National Standard 9 further clarifies that bycatch includes fishing mortality due to an encounter with fishing gear that does not result in capture of fish (i.e., unobserved fishing mortality) (50 CFR 600.350(c)(1)).

In 1996, the MSA was re-authorized and amended by enactment of the Sustainable Fisheries Act (SFA). The 1996 SFA amendments to the MSA added two key requirements of FMPs regarding bycatch. First, the new National Standard 9 (MSA §301(a)(9)) required that:

> *Conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.*

Second, MSA §303(a)(11) required that FMPs:

> *Establish a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery, and include conservation and management measures that, to the extent practicable and in the following priority—*
> *(A) minimize bycatch; and*
> *(B) minimize the mortality of bycatch which cannot be avoided.*

To address the requirements of the 1996 SFA, the Council prepared a comprehensive amendment to all four of its FMPs in existence at that time. Amendment 6 to the Bottomfish FMP, Amendment 8 to the Pelagics FMP, Amendment 10 to the Crustaceans FMP, and Amendment 4 to the Precious Corals FMP were published in September 1998 and transmitted to NMFS for review. NMFS only partially approved the amendments, as described in a Federal Register (FR) notice published on April 19, 1999 (64 FR 19067). The disapproved portions included the

bycatch provisions for the Bottomfish and Pelagics FMPs. In disapproving the bycatch provisions in the 1998 amendments, NMFS cited the need for the amendments to describe in more detail: quantification of bycatch by all sectors of the fisheries, the adequacy and identification of any shortfalls in bycatch data, existing measures taken to minimize bycatch and the mortality of bycatch, the catch of sea turtles in the pelagic fisheries, data and estimates of seabird incidental catch and ongoing efforts to reduce interactions with seabirds, and proposed new measures to improve bycatch reporting, reduce bycatch and bycatch mortality, and reduce interactions with seabirds and sea turtles. The Council prepared a joint supplement to the disapproved bycatch portions of Amendment 6 to the Bottomfish FMP and Amendment 8 to the Pelagics FMP, which was published in December 2002 and approved by NMFS in July 2003 (68 FR 46112).

The 1998 and 2002 FMP bycatch amendments (WPRFMC 1998, 2002) described the bycatch characteristics and data collection methodologies available for each fishery, and identified one or more data sources as the SBRM for each fishery. The amendments identified as SBRM existing federal observer and logbook programs, as well as non-federal logbook and creel survey programs.

The Council transitioned from its original fishery-based FMPs to ecosystem-based Fishery Management Plans (FEPs) in 2009 (WPRFMC 2009a-e). The FEPs carried forth the SBRM identified for each fishery in the 1998 and 2002 FMP bycatch amendments, incorporating by reference much of the background information for the identified methodologies. Excerpts of the existing SBRM provisions in the 2009 FEPs are provided in 0.

1.1 2017 Guidance on Establishing Standardized Bycatch Reporting Methodology

In 2017, NMFS published a final rule interpreting and providing guidance on the SBRM requirement under the MSA (82 FR 6317, January 19, 2017). The final rule requires that all FMPs be consistent with the requirements by February 21, 2022, and requires that the Council, in coordination with NMFS, conduct a review of its FMPs for consistency.

The final rule requires that each FMP:

1) Identify the methodology (i.e., the procedure or procedures) that constitute the SBRM for the fishery, which may include, but are not limited to, one or more of the following: Observer programs, electronic monitoring and reporting technologies, and self-reported mechanisms (e.g., recreational sampling, industry-reported catch and discard data);
2) Explain how the SBRM meets the purpose of "collect[ing], record[ing], and report[ing] bycatch data in a fishery that, in conjunction with other relevant sources of information, are used to assess the amount and type of bycatch occurring in the fishery and inform the development of conservation and management measures that, to the extent practicable, minimize bycatch and bycatch mortality", based on an analysis addressing:
   a. the characteristics of bycatch in a fishery, such as amount and type;
   b. the feasibility of cost, technical and operational perspectives;
   c. data uncertainty (SBRM should be designed so that uncertainty can be described, quantitatively or qualitatively), and
   d. how data is used to assess the amount and type of bycatch; and

3) If establishing an SBRM that may be adjusted in response to changes in cost or funding, should provide guidance to NMFS on how to adjust the implementation of the SBRM consistent with the FMP.

The final rule states that different SBRM may be appropriate for different fisheries due to the inherent diversity of fisheries. The rule also states that bycatch assessment procedures are not part of an SBRM, and thus do not need to be described as part of the methodology in an FMP.

The final rule clarifies that a review of SBRM (initial and every 5 years after) should provide information sufficient for NMFS to determine whether an FMP needs to be amended, and that the review should be documented, but does not need to be contained in an FMP.

1.2 Purpose of the Council Action

The purpose of this action is to update the existing SBRM provisions in the Council's five FEPs for consistency with the 2017 SBRM requirements. Council in coordination with Pacific Islands Regional Office (PIRO) Sustainable Fisheries Division (SFD) conducted a consistency review (Section 2), which concluded that, while no changes to the data collection methodologies are needed to meet the regulatory requirements, FEP amendments were warranted to update the SBRM and associated explanations in the FEPs.

1.3 Initial Council Actions

The Council at the 181st meeting in March 2020 received a presentation on the new requirements for SBRM and directed staff to work with PIRO to develop a review document to evaluate consistency of existing FEP SBRM with the 2017 requirements, and identify any steps needed to bring FEPs into compliance.

The Council at the 186th meeting in June 2021 received a report of the consistency review, which concluded that housekeeping amendments to the FEPs are warranted to update the SBRM tables with the current primary fishery data collection methods for each fishery and remove identification of SBRMs from fisheries that target Ecosystem Component species, and add explanations of how the SBRMs meet the purpose as defined in the 2017 final rule. The Council took initial action recommending that staff work with PIRO Sustainable Fisheries Division (SFD) to develop an omnibus amendment to update the SBRMs and associated descriptions in the FEP for consistency with the 2017 Final Rule, and as identified in the consistency review document.

The Council at the 187th meeting in September 2021 will consider final action on the omnibus amendment.

2 REVIEW OF FEP CONSISTENCY WITH NEW SBRM REQUIREMENTS

Council staff in coordination with PIRO SFD conducted a consistency review to evaluate whether the existing FEPs identify SBRMs for each fishery, contain an explanation of how the SBRMs meet the purpose, and to review the existing SBRMs by addressing the four criteria identified in the 2017 SBRM rule (bycatch characteristics, feasibility, data uncertainty, and data

use). The review concluded that, while no changes to the data collection methodologies are needed to meet consistency with the 2017 rule, FEP amendments were warranted to update the identification of SBRM for some fisheries and to add the explanations of how the SBRMs meet the purpose as defined in the 2017 final rule. The review was presented at the 186th Council meeting in June 2021. This section presents the consistency review, with information updated as necessary for this document. The proposed amendments to the FEPs identified through this review are described in Section 3.

Since the Council originally identified SBRMs in the FEPs, the Council designated ecosystem component species (ECS) in the American Samoa, Mariana Archipelago, and Hawaii Archipelago FEPs. Information regarding fisheries that target ECS are consolidated in Section 2.7 of this review.

2.1 Overview of Fishery Data Collection Methods used to for Bycatch Reporting in the Western Pacific Region

The five FEPs identify the primary fishery data collection methodologies as the SBRMs for each fishery. The specific SBRMs identified in the existing FEPs are described in Sections 2.2-2.6 of this document. Most of the fishery data collection methodologies (e.g., creel surveys) collect data for multiple fisheries and FEPs, and thus the general overviews of each method are consolidated in this section.

Each FEP relies on various information collection methodologies to gather bycatch data, whether it is through creel surveys, observer coverage, Federal logbooks and/or other methods. Bycatch data is summarized in annual Stock Assessment and Fishery Evaluation (SAFE) reports generated by the Plan Teams, which are reviewed by several Council advisory bodies including the Scientific and Statistical Committee (SSC). The Council also conducts data workshops aimed at improving data collection systems in the region. Reports from the Pacific Insular Fisheries Monitoring and Assessment Planning Summit (PIFMAPS) and other data workshops provide information on data collection systems to the Council and SSC. The SSC regularly discusses and provides advice to the Council and the Pacific Islands Fisheries Science Center (PIFSC) on data collection systems and methodology design considerations (e.g., data elements, sampling designs, sample sizes, and reporting frequency) through its meetings, in reviewing stock assessments, and as requested by the Council.

2.1.1 Territorial Fishery Data Collection

Creel surveys (shore-side surveys of vessel-based and/or shore-side fishing) are conducted year round in American Samoa, the Commonwealth of the Northern Mariana Islands (CNMI), and Guam. These surveys cover fishing by vessels engaged in subsistence, recreational, charter, and commercial fishing. The creel survey programs have been in place in American Samoa and Guam since 1985 and 1983, respectively. The creel survey in the CNMI started in 1988, was discontinued in 1996, and then reinitiated in mid-2000. The creel survey data are collected by the respective fisheries agencies of each of the three island areas (the CNMI Division of Fish and Wildlife (DFW), the Guam Division of Aquatic and Wildlife Resources (DAWR), and the American Samoa Department of Marine and Wildlife Resources (DMWR)). Each of the three agencies use creel sample data to generate annual effort and catch estimates using algorithms

developed with the assistance of PIFSC Western Pacific Fisheries Information Network (WPacFIN). The agencies submit annual report modules to the Council, and the respective Plan Teams compile them into the annual SAFE report.

In general, these creel surveys are based on a stratified random survey design that aims to provide an annual estimate of total catch by fishing method. The initial participation run counts the number of boats in the marina and boat-trailers on the boat ramps. In the case of shore-side fishing, the data collection staff drives to the assigned survey zones to count the number of fishers and log the number and type of gear used. The data collector attempts to intercept the fishermen on their way in to port or those that remain on the shoreline. Once a fisherman is intercepted, the data collector conducts the catch interview, documenting effort, catch, and bycatch information.

In response to the 1998 SFA amendments regarding bycatch reporting, the creel survey instruments in the three island areas were modified in 1999-2000 to collect bycatch data, which is recorded by species, number and/or weight, and condition (live, dead/injured). Fishery-wide bycatch estimates are derived from the sample data and expressed in the annual SAFE report in absolute terms (by number or weight) and as a percent of the total catch by species. The bycatch estimates generated in the creel surveys are expected to have relatively high levels of precision, accuracy, and reliability, and bycatch data are now collected and reported. Guam started including bycatch data in its reports for 2000. American Samoa and the CNMI started with their year-2001 reports. With continuing assistance from the WPacFin, the three island fisheries agencies have been incorporating the bycatch data into their data processing routines used to generate the fishery-wide catch (and bycatch) estimates for their annual reports for the past 20 years. Creel survey data is also used to augment the longline fishery data in the Pelagics SAFE report for the CNMI, Guam, and American Samoa fisheries that provides catches (and bycatch) from the small boat fisheries.

2.1.2 Hawaii Data Collection

Hawaii Commercial Marine License. The State of Hawaii requires that any person who takes marine life for commercial purposes obtain a commercial marine license (Hawaii Administrative Rules §13-74-20). All holders of such licenses are required to complete and submit to the Hawaii Division of Aquatic Resources (HDAR) one of several catch reporting forms. This requirement applies to fish caught in federal waters, including the PRIAs, but landed in Hawaii. The data submitted by commercial fishermen to HDAR are compiled and analyzed by HDAR, which releases the resulting reports annually. The results relevant to the Council-managed fisheries are incorporated into the annual SAFE report.

The default form for most fishermen is the Fish Catch Report, which is in the form of a daily log that is submitted monthly, predominantly online[1]. Aku pole-and-line boats use the HDAR's Aku Catch Report. Until 2000, vessels landing albacore in the state used the Albacore Trolling Trip

[1] https://dlnr.hawaii.gov/dar/fishing/commercial-fishing/

Report, but that was discontinued because HDAR receives logbook data that are required of those vessels under the High Seas Compliance Act (HSCA, see below). Longline vessels were, until the beginning of 2002, required to complete HDAR's Longline Trip Report, but that requirement was dropped because the information is being collected through the federal logbook program.

HDAR's commercial reporting system was revised in 20?? so that data from the fishing reports can be integrated with the fish purchase reports from the dealers. The HDAR Fishing Report includes information about the number of days fished, whether it was a charter trip, buoy or area fished, fishing method, hours fished per method and/or area, number of net sets or throws, number of fishing lines (or traps or net length in feet), port of landing, species, number of fish caught, pounds landed, and number of lost and released fish by species. Lost fish refers to lost to a predator, while released is bycatch. The bottom of the form has space for the fisherman to report what predator and how many predators to which they lost fish. Detailed instructions, standardized lists of species, fishing methods, and answers to frequently asked questions are on HDAR's website. The commercial marine dealers who purchase marine life directly from licensed commercial fishers report their purchases online through the online dealer report website[2], which was implemented in October 2019.

Hawaii Marine Recreational Fishing Survey. HDAR has been working with NMFS since 2001 to collect non-commercial (recreational) fishing data through the Hawaii Marine Recreational Fishing Survey (HMRFS). This is funded by NMFS through the Marine Recreational Information Program and USFWS through the Wildlife and Sport Fish Restoration Program. It consists of mail surveys to randomly selected households throughout Hawaii. The survey results are used to estimate the number of fishing trips taken by non-commercial shoreline and private boat fishers in Hawaii. To estimate the number of fish caught, HDAR staff collect catch data at various public fishing areas around the State. The HDAR staff identify, measure, and weigh the fish that were caught and collect information about fish that were released (i.e. bycatch).

2.1.3 Pelagic Fishery Data Collection

Hawaii and American Samoa Longline Permits. Holders of the Hawaii longline limited entry permit, American Samoa longline limited entry permit and general longline permits (i.e., all longliners in the region) are required to record and submit catch and effort data to NMFS. Specifically, vessel operators are required to record the number, by species, of the Pelagic Management Unit Species (PMUS) kept and discarded in a given set in the NMFS Western Pacific Daily Longline Fishing Log. This form also requires data on the numbers of sharks kept or released, as well as the number of protected species interactions by species and release condition. There is also space for recording the number of non-PMUS kept and discarded, but because the space is limited, the catch and bycatch of non-PMUS are substantially underreported (this shortcoming in the log is by design, as modifying the log to accommodate full reporting of non-PMUS would place an additional burden on fishermen and likely compromise the reliability

[2] https://dlnr.ehawaii.gov/odr

of the PMUS data). The first full year of logbook data from the Hawaii-based longline fishery was in 1991, and from the American Samoa fishery in 1996. Revisions to the logbook form have been made six times since 1995, and include adding then removing bird mitigation measures, shark records as kept or released, adding side set, removing mixed target species, adding minimum and maximum hooks per float, and adding two shark species. Data from the logbook programs are compiled by PIFSC, which generates annual reports. The results are incorporated into the annual SAFE report.

Observer data are also collected for the Hawaii and American Samoa longline fisheries. Observers are deployed on all Hawaii shallow-set pelagic longline trips, and 20 percent of the Hawaii and American Samoa deep-set longline trips. Data collected and recorded by observers include fishing effort, target catch and bycatch by species, condition at capture and/or release, and interactions with protected species. The data are used to calculate catch and bycatch rates and protected species interactions, as well as to product technical reports.

The establishment of logbook and observer placement requirements specifically accounted for the need to improve data for catch, bycatch and protected species information. Prior to the implementation of the federal logbook and observer programs for the Hawaii and American Samoa longline fisheries, management of these fisheries relied on catch and fishing effort reporting systems implemented by the State of Hawaii and the Territory of American Samoa. Recognizing the limitations in the reporting to inform management of a rapidly growing Hawaii longline fishery, the Council in 1991 recommended Pelagic FMP Amendment 2, which implemented federal permit and reporting requirements, as well as an observer requirement when fishing within the 50-mile protected species study area around the Northwestern Hawaiian Islands (NWHI). Amendment 2 was intended to increase the quality and quantity of data on the domestic longline fishery, and to improve the Council's ability to determine whether changes in management are necessary to conserve fish stocks, maintain the long-term economic viability of the fisheries for pelagic species, and protect and promote the rebuilding of stocks of protected species. The observer requirement for the Hawaii longline fishery became permanent and throughout the fishery's range in 1994, and the observer requirement for the American Samoa longline fishery was implemented in 2005 through Pelagic FMP Amendment 11.

Albacore Troll Vessels. Pursuant to the HSCA, albacore troll vessels are required to complete logbooks, the data from which go to the NMFS Southwest Fisheries Science Center (SWFSC), which shares them with the Pacific Fishery Management Council. The PFMC is responsible for addressing SBRM requirements for this fishery and will not be discussed further in this document.

US Purse Seine. Pursuant to the 1988 South Pacific Tuna Treaty Act, US purse seine vessels fishing in the treaty area must complete the South Pacific Regional Purse-Seine Logsheet. The form includes discards by species, number, and weight. While reporting requirements do not apply in the US EEZ, including the Pacific Remote Island Area (PRIA) waters, where purse seine effort is sometimes substantial around Howland and Baker Islands, Kingman Reef, and Palmyra Atoll, vessels have generally been recording their activity. Purse seiners can no longer fish at Wake and Jarvis Islands and Johnston Atolls due to the PRIA Marine National Monument expansion. The logbook program is administered by the South Pacific Community (SPC) and the Foreign Fisheries Agency (FFA). The data are stored at the SPC and at the SWFSC. The results

are published in Pelagics SAFE reports. Additionally, the SPC requires observer coverage. However, because the US purse seine fleet is not managed by the WPRFMC, SBRM requirements in the Pelagics FEP do not apply and will not be discussed further in this document.

2.1.4 PRIA Data Collection Methods

There are federal reporting requirements for permits issued for troll or handline, bottomfish, crustacean, and precious coral fishing in the PRIAs (see the Code of Federal Regulations (CFR) 665.14(b)(2)(iii)), and the PRIA FEP identifies these federal logbooks as the SBRM. More information about permits and reporting can be found on the PIRO website.

2.1.5 Upcoming Data Collection Methods

There are data collection tools currently in development, including electronic monitoring of the longline fleet and a fishing app (CatchIt-LogIt) for territorial fishing data collection. These are not fully implemented as primary data collection methods, but may be incorporated into SBRM in future reviews (i.e. the 5-year SBRM review requirement (82 FR 6317)). These will not be discussed further in this document.

2.2 American Samoa FEP

2.2.1 Bottomfish Fishery

The current American Samoa bottomfish fishery is a small boat fishery comprised mostly of a 12 to 15 foot double aluminum hulled vessel fishing using two to four rod and reel with a baited terminal hook. The use of bottom trawls, bottom set gillnets, poisons, and explosives to target bottomfish MUS or ECS is prohibited under the FEP regulations. The fishery targets mostly shallow reef fish or deep-water snapper. Hook and line gear strongly select for carnivores (WPRFMC 2002). These types of species tend to be favored in markets, thus they tend to be target species (WPRFMC 2002).

Does the FEP identify an SBRM?

The Council established SBRM for the American Samoa bottomfish fishery through the 2002 Bottomfish FMP Amendment 6 (Supplement), which was carried forward in the 2009 American Samoa Archipelago FEP (AS FEP). The 2002 Bottomfish FMP Amendment 6 (Supplement) and the 2009 AS FEP identify the American Samoa DMWR boat-based and shore-based creel surveys as the SBRM for this fishery. The creel surveys were described in section 4.1.2.3 of the bycatch amendment (WPRFMC 2002), and are described above in section 2.1.1 and in annual SAFE reports. The creel surveys for fishing effort and catch cover multiple periods within the day, days in the week and different regions of shoreline and boat ramps or marina. As part of these surveys, American Samoa DAWR staff ask fishermen if they released any fish and the state of disposition to collect data on bycatch. Creel surveys collect bycatch data on species, number and/or weight, and condition (live, dead/injured).

The Council could also utilize observer data to supplement bycatch data should an observer program be implemented; however there is currently no active observer program for the American Samoa bottomfish fishery and the observer program is not identified as SBRM. While

the commercial receipt book system in American Samoa also collects fishing effort data, they do not distinguish bycatch and are not identified as part of the SBRM.

Does the FEP contain an explanation of how the identified SBRM meets the purpose?
There is no explicit explanation of how the SBRM meets this requirement in the existing FEP because the requirement that FMPs include an explanation of how the identified SBRM meets that purpose were codified in regulations through the 2017 final rule, and were not available at the time the Council developed the 2002 Bottomfish FMP Amendment 6 (Supplement) or 2009 American Samoa FEP. However, the creel surveys identified as SBRM in the AS FEP provide a means of collecting, recording, and recording bycatch data. The AS FEP states that bycatch data are summarized in the annual SAFE reports.

Based on the review below, the SBRM identified for this fishery meets the purpose by providing the means for the Council to determine the approximate amount and type of bycatch occurring in the American Samoa bottomfish fishery, when combined with other sources of data. While other data collection methodologies such as logbooks and observer programs may provide more precise estimates of bycatch, the creel survey is an appropriate SBRM for this fishery due to the fishery characteristics and known bycatch characteristics (small fishery using selective gear that retains most fish species caught). Therefore, no change is needed for the identification of the SBRM, but the FEP amendment is needed to add an explanation of how the creel survey meets the purpose for the SBRM. The proposed amendment based on this review is described in section 3.1.

Evaluation of the SBRM under the four review factors (§600.1610(a)(2)(i)-(iv)):

1) Bycatch characteristics

The bottomfish fishery is mostly a boat-based operation; however, some harvest of bottomfish management unit species (BMUS) also comes from shore-based fishing. Catch and bycatch of both components of the fishery are captured in the creel surveys. As noted in the FEP, bycatch in the fishery is summarized in the annual SAFE report for American Samoa. The 2019 SAFE report for American Samoa reports that there was no bycatch recorded in this fishery (WPRFMC 2020a). In general, bycatch in this fishery is believed to be minor (e.g., ciguatoxic mu (*Lutjanus bohar*)) due to the selective nature of the hook and line gear. Most of the fish caught are retained because there are no territorial or federal regulations that limit the size of bottomfish being harvested (i.e., there have not been regulatory discards). Some reef fish species that are caught incidentally during shallow-bottomfishing operations are generally retained thus not considered as bycatch. These fish may be shared among the community and the village elders. This shallow bottomfish fishery is mostly in Territorial waters. Bycatch data will be updated in the annual SAFE reports.

2) Feasibility of methodology, from cost, technical, and operational perspectives

The FEP does not explicitly discuss the feasibility of maintaining creel surveys, but annual SAFE reports provide brief descriptions of the methodology and a summary of creel survey days and interviews. With support from PIFSC, DMWR has continuously conducted the creel survey for its fishery data collection since 1985 in American Samoa. The survey is conducted year-round and covers fishing by persons engaged in subsistence, recreational, charter, and commercial fishing (WPRFMC 2009a). Detailed survey methodology was initially summarized

in section 4.1.2.3 of the bycatch amendment (WPRFMC 2002), is described in section 2.1.1 of this report, and in the SAFE reports. The data collection form has changed since the amendment, and now includes collection of bycatch data, which is recorded by species, number and/or weight, and condition of protected species (live, dead/injured; fish bycatch does not have condition reported).

The cost of implementation of bycatch monitoring is embedded in the creel survey itself, so there is not a separate, additional cost to address bycatch. The surveys are supported through the Cooperative Agreement between DMWR and USFWS-Sportfish Restoration Funds, NOAA PIRO Interjurisdictional Fisheries Act funds, and NOAA-PIFSC WPacFIN funds. The funding may fluctuate, but base-funding to support the operations is somewhat stable, thus the methodology is able to monitor bycatch over time. The FEP does not address how NMFS should adjust funding to these programs if there is a change in available funds.

The 2019 SAFE report indicates that the number of sample days has been fairly stable, but the number of regular survey interviews has decreased over time. This trend is illustrated by comparing the average number of surveys over different periods. The 20-year average is 278 surveys per year, the 10-year average is 205, and the 5-year average is 179. A PIFSC report analyzing territorial creel survey programs noted challenges related to funding, geography, and staffing can affect survey implementation (Hospital 2015). In small programs like the creel survey, the loss of an individual surveyor can be impactful because work cannot be redistributed among other staff. For example, there have been challenges maintaining continuous sampling in the Manua Islands, which has resulted in reduced data collection there in recent years. In spite of these challenges, the creel survey program in American Samoa has been operating continuously for several decades and is feasible methodology for collecting bycatch information in the bottomfish fishery.

Other potential options to gather bycatch data such as observer programs may provide more accurate and precise data, but generally cost more per unit of coverage and are likely to be cost-prohibitive in a small fishery. The small size of vessels in the fishery also makes the placement of observers difficult. Fishery independent research may provide useful supplemental information on bycatch, but these programs are often of limited duration and do not provide a long-term time series. These programs are not likely to be feasible in the fishery.

3) Uncertainty of data resulting from the methodology

Due to the fishery characteristics and existing data collection programs, the Council has not identified a need for implementing logbook or observer programs in the American Samoa bottomfish fishery for purposes of catch or bycatch monitoring. Creel surveys, which rely on direct observations of landings and interviews with fishermen just after reaching port, generally yield highly reliable information about landings and somewhat reliable information about bycatch (WPRFMC 2002). The latter is limited by the memories (and sometimes truthfulness) of fishermen and the difficulties in accurately identifying fish, mammals, sea turtles, and seabirds to the species level. The precision associated with fishery-wide estimates derived from creel surveys is a function of sampling intensity (WPRFMC 2002).

The AS FEP notes that "bycatch rates are relatively low in the bottomfish fisheries, but…reliable estimates are not yet available for the bottomfish fisheries of American Samoa" (WPRFMC 2009). The bycatch data is from the raw count of number of individual caught and number that is retained. The difference between the two is the bycatch (fish released). Raw counts do not have a statistical uncertainty, and the current expansion methodology is not able to provide one for individual fisheries or species. If expansion methodologies are developed that can provide a robust quantitative measure of variability or uncertainty, the Council will work with the SSC, PIFSC and the Archipelagic Plan Team to include this information in annual SAFE reports. From a qualitative perspective, there are uncertainties from the raw count because not all trips are being accounted for. There is also an unknown bias based on who was sampled at any given year, and variation in sampling effort and the number of interviews will affect this uncertainty.

4) How data resulting from the methodology are used to assess amount and type of bycatch occurring in the fishery

For annual SAFE reports (e.g., WPRFMC 2020a), bycatch is calculated as follows: the number caught is the sum of the total number of individuals found in the raw data including bycatch. The number kept is the total number of individuals in the raw data that are not marked as bycatch. The number released is bycatch caught minus the number of bycatch kept. Percent bycatch is the sum of all bycatch divided by the total catch.

As indicated in the FEP, the creel survey bycatch data are summarized in the Annual SAFE Reports. When combined with other sources of data, this information can provide the means for the Council to determine the approximate amount and type of bycatch occurring in the American Samoa bottomfish fishery.

Due to the fishery characteristics and known bycatch characteristics of this fishery, the creel survey is an appropriate SBRM for this fishery. If the Council identifies potential bycatch concerns based on creel survey data, the Council may in the future recommend additional data collection efforts to improve those bycatch estimates to inform development of appropriate bycatch mitigation measures, the feasibility of which will be assessed in the development of the SBRM. Council advisory bodies such as the Plan Team and Advisory Panel may also identify potential bycatch concerns based on local expert knowledge.

2.3 Mariana Archipelago FEP

2.3.1 Guam Bottomfish Fishery

The Guam bottomfish fishery is a small boat fishery comprised of mostly non-full time fishermen with 12-15 foot fiberglass boats. A few part-time "hi-liners" in the fishery are capable of targeting deep snapper separately from the shallow fishes. The generalist bottomfish fishers mostly catch the shallower species. The deepwater snappers are more favored in the restaurants that cater to tourists and the military based in Guam. Deepwater snappers are mostly caught in the steep drop offs around Guam and the offshore banks of Galvez and Santa Rosa. There are some Guam fishermen that fish around Rota Banks, which is within the management boundary of CNMI, and land the fish in Guam. The Marianas Annual SAFE Report showed there are 52 unique vessels logged that did 76 trips for BMUS in 2019. On average there are 3 fishermen involved in a fishing trip (WPRFMC 2020c).

Does the FEP identify an SBRM?
The Marianas FEP identifies two components to the SBRM for the Guam bottomfish fishery: (1) the offshore (boat-based) and inshore (shore-based) creel surveys run by DAWR and (2) the federal logbook program required for vessels larger the 50 feet. Similar to the American Samoa data collection, Guam's primary data collection method is the boat- and shore-based creel surveys, the methodology of which was initially summarized in section 4.1.2.3 of the bycatch amendment (WPRFMC 2002), is described above in Section 2.1.1, and in annual SAFE reports. The creel surveys for fishing effort and catch cover multiple periods within the day, days in the week and different regions of Guam shoreline and boat ramps or marina. As part of these surveys, Guam DAWR staff ask fishermen if they released any fish and the state of disposition to collect data on bycatch. Creel surveys collect bycatch data on species, number and/or weight, and condition (live, dead/injured).

The owner of any large vessel used to fish for, land, or transship bottomfish MUS or ECS in the Guam EEZ must have a federal permit registered for use with that vessel. Federal permittees are subject to logbook reporting requirements.

A vessel may need to carry an observer if directed by PIRO's Regional Administrator (§665.407), however to date this has not occurred. Observer coverage could supplement bycatch data, but is not an identified SBRM. While the commercial receipt book system in Guam and CNMI, and aerial surveys in Guam also collect fishing effort data, they do not distinguish bycatch and are not identified as part of the SBRM.

Does the FEP contain an explanation of how the identified SBRM meets the purpose?
There is not an explicit explanation of how the SBRM meets this requirement in the existing FEP because the requirement that FMPs include an explanation of how the identified SBRM meets that purpose were codified in regulations through the 2017 final rule, and were not available at the time the Council developed the 2002 Bottomfish FMP Amendment 6 (Supplement) or 2009 Marianas FEP. However, the creel surveys identified as SBRM in the Marianas FEP provide a means of collecting, recording, and recording bycatch data. The Marianas FEP states that bycatch data are summarized in annual SAFE reports (e.g., WPFMC 2020c).

Based on the review below, the SBRM identified for this fishery meets the purpose by providing the means for the Council to determine the approximate amount and type of bycatch occurring in the Guam bottomfish fishery, when combined with other sources of data. While other data collection methodologies such as observer programs may provide more precise estimates of bycatch, the creel survey and logbooks are appropriate SBRMs for this fishery due to the fishery characteristics and known bycatch characteristics (using selective gear that retains most fish species caught). Therefore, no change is needed for the identification of the SBRM, but the FEP amendment is needed to add an explanation of how the creel survey and federal logbook meet the purpose for the SBRM. The proposed amendment based on this review is described in section 3.2.

Evaluation of the SBRM under the four review factors (§600.1610(a)(2)(i)-(iv)):

1) Bycatch characteristics

The bottomfish fishery is mostly a boat-based operation; however, some harvest of BMUS also comes from shore-based fishing. Catch and bycatch are both captured in the creel surveys. As noted in the FEP, the bycatch in this fishery is less than four percent and includes predominantly fish from the mullidae family, *Parupeneus multifasciatus,* and *Melichthys vidua*, among others (WPRFMC 2009c). The FEP also notes that updated bycatch data in the fishery is summarized in the annual SAFE report. During trips in 2019 that only caught BMUS, there were zero percent discards; for trips that caught non-BMUS species using the same gear, there was a four percent discard (WPRFMC 2020c). Bycatch is generally low in this fishery due to the selective nature of the hook and line gear, and because most fish species caught are retained. There are territorial minimum size limits for certain shallow water BMUS species, so this may result in regulatory discards. Bycatch data will be updated in the annual SAFE reports.

In 2019, there were no federal permits issued for the bottomfish fishery in Guam (WPRFMC 2020c). NMFS has not received any logbook reports associated with this permit, so does not have any additional information on bycatch from this component of the SBRM.

2) Feasibility of methodology, from cost, technical, and operational perspectives

The FEP does not explicitly discuss the feasibility of maintaining creel surveys, but annual SAFE reports provide a brief description of the methodology and a summary of creel survey days and interviews (WPRFMC 2020c, Table 19). DAWR conducts creel surveys on Guam with support from PIFSC. The creel survey has been continuously implemented since 1982. The survey is conducted year-round, and covers fishing by persons engaged in subsistence, recreational, charter, and commercial fishing (WPRFMC 2009c). Detailed survey methodology was initially summarized in section 4.1.2.3 of the bycatch amendment (WPRFMC 2002), is described in section 2.1.1, and in the SAFE reports.

The cost of implementation of bycatch monitoring is embedded in the creel survey itself, so there is not a separate, additional cost to address bycatch. The surveys are supported through the Cooperative Agreement between DMWR and USFWS-Sportfish Restoration Funds, NOAA PIRO Interjurisdictional Fisheries Act funds, and NOAA-PIFSC WPacFIN funds. The funding may fluctuate but base-funding to support the operations is somewhat stable, thus the methodology is able to monitor bycatch over time. The FEP does not address how NMFS should adjust funding to these programs if there is a change in available funds.

The 2019 SAFE report indicates that the number of sample days has been fairly stable, but the number of regular survey interviews has increased recently. This trend is illustrated by comparing the average number of surveys over different periods. The 20-year average is 689 surveys per year, the 10-year average is 707, and the 5-year average is 790. A PIFSC report analyzing territorial creel survey programs noted challenges related to funding, geography, and staffing can affect the implementation of survey programs (Hospital 2015). In spite of these challenges, the creel survey program in Guam has been operating continuously for several decades and is feasible methodology for collecting bycatch information the fishery.

Federal logbooks are funded through NMFS. At its highest point, only approximately six permits were sold in 2011 (WPRFMC 2021c). Currently, there are no bottomfish vessels operating that are greater than 50 feet. There have never been any logbooks supplied to NMFS. Logbooks are feasible from a cost and technical standpoint, but given that no logbooks have been supplied to NMFS, there was either no harvest by these vessels or the logbooks are not feasible from an operational standpoint.

Other potential options to gather bycatch data such as observer programs may provide more accurate and precise data, but generally cost more per unit of coverage and are likely to be cost-prohibitive in a small fishery. The small size of vessels in the fishery also makes the placement of observers difficult. Fishery independent research may provide useful supplemental information on bycatch, but these programs are often of limited duration and do not provide a long-term time series. These programs are not likely to be feasible in the fishery.

3) Uncertainty of data resulting from the methodology

Creel surveys, which rely on direct observations of landings and interviews with fishermen just after reaching port, generally yield highly reliable information about landings and somewhat reliable information about bycatch (WPRFMC 2002). The latter is limited by the memories (and sometimes truthfulness) of fishermen and the difficulties in accurately identifying fish, mammals, sea turtles, and seabirds to the species level. The precision associated with fishery-wide estimates derived from creel surveys is a function of sampling intensity (WPRFMC 2002).

The bycatch data is from the raw count of number of individual caught and number that is retained. The difference between the two is the bycatch (fish released). Raw counts do not have a statistical uncertainty, and the current expansion methodology is not able to provide one for individual fisheries or species. If expansion methodologies are developed that can provide a robust quantitative measure of variability or uncertainty, the Council will work with the SSC, PIFSC and the Archipelagic Plan Team to include this information in annual SAFE reports. From a qualitative perspective, there are uncertainties from the raw count because not all trips are being accounted for. There is also an unknown bias based on who was sampled in any given year, and variation in sampling effort and the number of interviews will affect this uncertainty.

In the federal logbooks, the uncertainties stem from the accuracy of reporting by permitted fishermen on the amount of discards. However, NMFS has not received fishing reports from federal logbooks for this fishery, so this component of SBRM is not providing information to supplement that derived from creel surveys.

4) How data resulting from the methodology are used to assess amount and type of bycatch occurring in the fishery

For annual SAFE reports (e.g., WPRFMC 2020c), bycatch is calculated as follows: the number caught is the sum of the total number of individuals found in the raw data including bycatch. The number kept is the total number of individuals in the raw data that are not marked as bycatch. The number released is bycatch caught minus the number of bycatch kept. Percent bycatch is the sum of all bycatch divided by the total catch.

As indicated in the FEP, the creel survey bycatch data are summarized in the annual SAFE reports. When combined with other sources of data including fishery-independent research, this

information can provide the means for the Council to determine the approximate amount and type of bycatch occurring in the Guam bottomfish fishery. Due to the fishery characteristics and known bycatch characteristics of this fishery, the creel survey is an appropriate SBRM for this fishery. No logbooks have been provided to NMFS, thus no logbook data has been used to date to assess bycatch. If the Council identifies potential bycatch concerns based on creel survey data, the Council may in the future recommend additional data collection efforts to improve those bycatch estimates to inform development of appropriate bycatch mitigation measures. Council advisory bodies such as the Plan Team and Advisory Panel may also identify potential bycatch concerns based on local expert knowledge.

2.3.2 CNMI Bottomfish Fishery

The CNMI bottomfish fishery is comprised on small fishing vessels (<25 foot) that fish around the islands of Saipan, Tinian, and Rota while larger vessels (>25 foot) are able to fish in the more distant Northern Islands. The nearshore bottomfishing catches the primarily shallow bottomfish MUS species, while those that fish the offshore banks (e.g., Rota Banks) and the Northern Islands (Sarigan, Agrihan, Farallon de Medinilla) fish for the larger deepwater snappers, primarily onaga. In 2019, there were 11 vessels permitted vessels to fish for bottomfish in the federal waters in CNMI. There were 8 unique vessels counted in the creel interview files that caught BMUS in 2019. There was a total of 8 BMUS trips counted each with an average of 2 fishers per trip (WPRFMC 2020c).

Does the FEP identify an SBRM?

The Marianas FEP identifies two components to the SBRM for the bottomfish fishery: (1) the offshore (boat-based) creel surveys run by DFW and (2) the federal logbook program required for commercial fishing in federal waters (Table 29). The CNMI's primary data collection method is the boat-based creel survey, the methodology of which was initially summarized in section 4.1.2.3 of the bycatch amendment (WPRFMC 2002), is described above in Section 2.1.1. A difference from American Samoa and Guam is that the shore-based surveys, which are also conducted in the CNMI, are not identified as an SBRM. The following discussion will include both shore- and boat-based creel, as they have similar characteristics and the shore-based creel would be added as an SBRM in this amendment.

Compared to American Samoa and Guam, the data collection in CNMI only became consistent in 2000. There were several attempts in the '80s and '90s but they were not standardized. The boat-based creel survey was reinitiated in 2000 and the shore-based creel survey in 2005. The 2005 reinitiation of the shore-based creel came after the 2002 bycatch amendment (WPRFMC 2002), so that is why it was not included as an SBRM. The creel surveys follow a random stratified design sampling the different ports, marinas and segments of the shoreline on different time strata and days in the week. As part of these surveys, CNMI DFW staff ask fishermen if they released any fish and the state of disposition (i.e., live or dead) to collect data on bycatch. Creel surveys collect bycatch data on species, number and/or weight, and condition (live, dead/injured).

NMFS requires permit and reporting for vessels that fish commercially for bottomfish in federal waters. The owner of any vessel used to commercially fish for, transship, receive, or land bottomfish MUS or ECS in the CNMI EEZ must have a permit issued for use with that vessel.

A vessel may need to carry an observer if directed by PIRO's Regional Administrator (§665.407), however to date this has not occurred. Observer coverage could supplement bycatch data, but is not an identified SBRM.

Does the FEP contain an explanation of how the identified SBRM meets the purpose?
There is no explicit explanation of how the SBRM meets this requirement in the existing FEP because the requirement that FMPs include an explanation of how the identified SBRM meets that purpose was codified in regulations through the 2017 final rule, and was not available at the time the Council developed the 2002 Bottomfish FMP Amendment 6 (Supplement) or 2009 Marianas FEP. However, the creel survey and federal logbook identified as SBRM in the Marianas FEP provide a means of collecting, recording, and recording bycatch data. The Marianas FEP states that bycatch data are summarized in the annual SAFE report.

Based on the review below, the SBRM identified for this fishery meets the purpose by providing the means for the Council to determine the approximate amount and type of bycatch occurring in the CNMI bottomfish fishery, when combined with other sources of data. While other data collection methodologies such as observer programs may provide more precise estimates of bycatch, the creel survey and logbooks are appropriate SBRMs for this fishery due to the fishery characteristics and known bycatch characteristics (using selective gear that retains most fish species caught). An FEP amendment is needed to identify the shore-based creel survey as part of the SBRM and to add an explanation of how the creel survey and federal logbook meet the purpose for the SBRM. The proposed amendment based on this review is described in section 3.2.

Evaluation of the SBRM under the four review factors (§600.1610(a)(2)(i)-(iv)):

1) Bycatch characteristics
As noted in the Marianas FEP (section 4.2.1.3), almost all fishes caught in the CNMI are considered food fishes, though the percent released varies by species or family from a low of 2 percent for blueline snapper (*Lutjanus kasmira*) to a high of 56 percent for red snapper (in this case, *L. bohar*, which is ciguatoxic). More recent information from the 2019 Marianas Annual SAFE Report showed zero percent bycatch reported in the boat-based creel surveys in the fishery since 2006. There are no local or federal regulations that limit the size of species of BMUS that would result in regulatory discards.

There were no federal logbook reports in the fishery in 2019, and few reports have been submitted since the program began. The federal catch reports are available through PIFSC and the information is available for review if the Council finds concerns regarding bycatch in the bottomfish fishery. Bycatch data will be updated in annual SAFE reports.

2) Feasibility of methodology, from cost, technical, and operational perspectives
The FEP does not explicitly discuss the feasibility of maintaining creel surveys, but annual SAFE reports provide a brief description of the methodology and a summary of creel survey days and interviews (WPRFMC 2020c, Table 1). DFW conducts the fishery data collection in CNMI with support from PIFSC. The creel survey has been implemented consistently since 2000 for the boat-based survey. The survey is conducted year-round, and covers fishing by persons engaged in subsistence, recreational, charter, and commercial fishing (WPRFMC 2009c).

Detailed survey methodology was initially summarized in section 4.1.2.3 of the bycatch amendment (WPRFMC 2002), is described in section 2.1.1 of this report, and in the SAFE reports.

The cost of implementation of bycatch monitoring is embedded in the creel survey itself, so there is not a separate, additional cost to address bycatch. The surveys are supported through the Cooperative Agreement between CNMI DFW and USFWS-Sportfish Restoration Funds, NOAA PIRO Interjurisdictional Fisheries Act funds, and NOAA-PIFSC WPacFIN funds. The funding may fluctuate but base-funding to support the operations is somewhat stable, thus the methodology is able to monitor bycatch over time. The FEP does not address how NMFS should adjust funding to these programs if there is a change in available funds.

The 2019 SAFE report (WPRFMC 2020c) indicates that the number of sample days has been fairly stable, but the number of regular survey interviews has decreased recently. This trend is illustrated by comparing the average number of surveys over different periods. The 20-year average is 209 surveys per year, the 10-year average is 139, and the 5-year average is 109. A PIFSC report analyzing territorial creel survey programs noted challenges related to funding, geography, and staffing can affect the implementation of survey programs (Hospital 2015). In spite of these challenges, the creel survey program in the CNMI has been operating continuously for several decades and is feasible methodology for collecting bycatch information the fishery.

Federal logbooks are funded by NMFS. As recently as 2017 there were 25 permits issued; however since 2014, three or fewer people have reported, which means the data cannot be used due to confidentiality restrictions. Logbooks are feasible from a cost and technical standpoint, but given that so few logbooks have been supplied to NMFS, potentially they are not feasible from an operational standpoint.

Other potential options to gather bycatch data such as observer programs may provide more accurate and precise data, but generally cost more per unit of coverage and are likely to be cost-prohibitive in a small fishery. The small size of vessels in the fishery also makes the placement of observers difficult. Fishery independent research may provide useful supplemental information on bycatch, but these programs are often of limited duration and do not provide a long-term time series. These programs are not likely to be feasible in the fishery.

3) Uncertainty of data resulting from the methodology

Creel surveys, which rely on direct observations of landings and interviews with fishermen just after reaching port, generally yield highly reliable information about landings and somewhat reliable information about bycatch (WPRFMC 2002). The latter is limited by the memories (and sometimes truthfulness) of fishermen and the difficulties in accurately identifying fish, mammals, sea turtles, and seabirds to the species level. The bottomfish fishery is mostly a boat-based operation; however, some harvest of BMUS also comes from shore-based fishing which is not part of the SBRM in the CNMI. The precision associated with fishery-wide estimates derived from creel surveys is a function of sampling intensity (WPRFMC 2002).

The bycatch data is from the raw count of number of individual caught and number that is retained. The difference between the two is the bycatch (fish released). Raw counts do not have a statistical uncertainty, and the current expansion methodology is not able to provide one for

individual fisheries or species. If expansion methodologies are developed that can provide a robust quantitative measure of variability or uncertainty, the Council will work with the SSC, PIFSC and the Archipelagic Plan Team to include this information in annual SAFE reports. From a qualitative perspective, there are uncertainties from the raw count because not all trips are being accounted for. There is also an unknown bias based on who was sampled at any given year, and variation in sampling effort and the number of interviews will affect this uncertainty.

In the federal logbooks, the uncertainties stem from the accuracy of reporting by permitted fishermen on the amount of discards. However, NMFS has received two or fewer federal logbooks reports for this fishery for the last several years. This information is confidential so this component of SBRM is not providing information to supplement that derived from creel surveys.

4) How data resulting from the methodology are used to assess amount and type of bycatch occurring in the fishery

For annual SAFE reports (e.g., WPRFMC 2020c), bycatch is calculated as follows: the number caught is the sum of the total number of individuals found in the raw data including bycatch. The number kept is the total number of individuals in the raw data that are not marked as bycatch. The number released is bycatch caught minus the number of bycatch kept. Percent bycatch is the sum of all bycatch divided by the total catch.

As indicated in the FEP, the creel survey bycatch data are summarized in the annual SAFE Reports. When combined with other sources of data, this information can provide the means for the Council to determine the approximate amount and type of bycatch occurring in the CNMI bottomfish fishery. Due to the fishery characteristics and known bycatch characteristics of this fishery, the creel survey is an appropriate SBRM for this fishery. So few logbooks have been provided to NMFS that the data cannot be used due to confidentiality restrictions, thus no logbook data has been used to date to assess bycatch. If the Council identifies potential bycatch concerns based on creel survey data, the Council may in the future recommend additional data collection efforts to improve those bycatch estimates to inform development of appropriate bycatch mitigation measures. Council advisory bodies such as the Plan Team and Advisory Panel may also identify potential bycatch concerns based on local expert knowledge.

2.4 Hawaii Archipelago FEP

2.4.1 Bottomfish Fishery

Main Hawaiian Islands Bottomfish Fisheries

The State of Hawaii Department of Land and Natural Resources, Division of Aquatic Resources (HDAR or DAR) manages the deep-sea bottomfish fishery in the Main Hawaiian Islands (MHI) under a joint management arrangement with the National Marine Fisheries Service (NMFS), PIRO, and the Council. There are currently eight species of BMUS in the MHI bottomfish fishery which are managed as two stocks, the multispecies "Deep 7" bottomfish stock complex, and uku (*Aprion virescens*). The Deep 7 stock complex is comprised of seven deepwater bottomfish: opakapaka (*Pristipomoides filamentosus*; pink snapper), onaga (*Etelis coruscans*; longtail snapper), ehu (*E. carbunculus*; ruby snapper), hapuupuu (*Hyporthodus quernus*; Hawaiian grouper), kalekale (*P. sieboldii*; Von Siebold's snapper), gindai (*P. zonatus*; oblique-banded snapper), and lehi (*Aphareus rutilans*; silverjaw snapper). For several years, uku was

managed as part of the "non-Deep 7" stock complex, but all species except uku were reclassified as ECS in 2019 (February 8, 2019, 84 FR 2767).

HDAR collects the fishery information (see "Hawaii Commercial Marine License" section), NMFS analyzes this information, and the Council, working with HDAR, proposes the management scheme. Lastly, the NMFS implements the scheme into federal regulations. These three agencies have implemented complimentary management to simplify regulations for the fishing public, prevent overfishing, and manage the fishery for long-term sustainability. The information in this report is largely based on HDAR-collected data.

With the exception of noncommercial fishing participants fishing in federal waters, the MHI bottomfish fishery is not subject to federal permit or reporting requirements, but commercial fishermen (those who sell one or more fish during the year) are required to obtain commercial marine licenses (CML) and to submit State catch reports of fishing activity, including all catches and bycatch (discards), on a per trip basis for Deep 7 fishing. These reports must be submitted 5 days after completion of the trip. For uku and all other fishing, reports are submitted on a monthly basis. It is difficult to separate catches originating from State (0-3 miles from shore) vs. Federal (3-200 miles from shore) waters as HDAR uses catch reporting forms which do not differentiate these areas. As a result, information on MHI catches is not spatially separated and, unless otherwise noted, represents catches from both State and Federal waters around the MHI.

In 2019, the MHI Deep 7 bottomfish fishery had decreasing trends in catch and effort relative to the 10 and 20 year averages, most likely attributable to trends in deep-sea handline fishing (WPRFMC 2020b). Non deep-sea methods of harvest are responsible for a much lower portion of catch, but did have increases relative to historical average for several species. The non-Deep 7 BMUS is solely comprised of uku, which had lower catch than historical averages in 2019 (WPRFMCb 2020).

From 2015-2020, there have been fewer than three federal permits per year for the MHI non-commercial bottomfish fishery (WPFMC 2021b). Data for three or fewer participants is confidential, but there have also been no reports submitted for the MHI non-commercial bottomfish fishery since 2011.

Northwestern Hawaiian Islands Bottomfish Fishery

Historically the fisheries for Hawaii bottomfish operated in two management subareas: (1) the inhabited MHI, and (2) the Northwestern Hawaiian Islands (NWHI), a 1,200 nm chain of largely uninhabited islets, reefs, and shoals. The fishery in the NWHI was managed through a limited access program administered by the Council. In 2009, NMFS closed the NWHI fishery in accordance with provisions of the Presidential Proclamation establishing the Papahanaumokuakea Marine National Monument and prohibiting commercial fishing (71 FR 51134, August 29, 2006). In the years preceding the closure of the fishery, target species were similar to the BMUS targeted by the bottomfish fishery in the MHI. Fishery regulations are still implemented for NWHI bottomfish fishery should a fishery develop in the future.

Fishing for, and possession of, Hawaii bottomfish MUS or ECS, or seamount groundfish MUS in the Hancock Seamounts Ecosystem Management Area is prohibited until the Regional Administrator determines that the armorhead stock is rebuilt.

Does the FEP identify an SBRM?
For the MHI, the Council established SBRM through the 2002 Bottomfish FMP Amendment 6 (Supplement), which was carried forward in the 2009 Hawaii Archipelago FEP. The Hawaii Archipelago FEP identifies the State of Hawaii HDAR fish catch report and the HMRFS creel survey as data sources. Since the publication of the Hawaii FEP in 2009, HDAR's commercial reporting system was updated and the current status is documented above in Section 2.1.2 and the introduction to this section. Through the HDAR fish catch report, fishermen record and report data on the number of lost and released fish by species. Information on the implementation of HMRFS creel surveys is also found in annual SAFE reports.

All of the fishery data collection methodologies previously identified as SBRM for the NWHI bottomfish fishery are still in place. Bottomfish fishing in the NWHI requires a permit and reporting and is subject to observer coverage if so directed by the PIRO Regional Administrator. The seamount groundfish fishery at Hancock Seamounts has been closed since 1986 and will remain closed until the overfished stock of armorhead (*Pseudopentaceros wheeleri*) is rebuilt. There has never been a U.S. fishery targeting this species, and it is overfished because of over-exploitation by foreign vessels (75 FR 69015, November 10, 2010). The Council and NMFS will identify an SBRM if the fishery should reopen.

Does the FEP contain an explanation of how the identified SBRM meets the purpose?
The purpose of SBRM, as well as the requirement that FMPs include an explanation of how the identified SBRM meets that purpose, were codified in regulations through the 2017 final rule, and were not available at the time the Council developed the 2002 Bottomfish FMP Amendment 6 (Supplement) or the 2009 FEP. Therefore, no explicit explanation to meet this requirement is included in the existing FEP. However, the federal logbooks, CML reports, and creel survey identified as SBRM in the Hawaii FEP provide a means of collecting, recording, and recording bycatch data, and the FEP states that bycatch data are summarized in the Council's annual SAFE reports.

Based on the review below, the SBRM identified for this fishery meets the purpose by providing the means for the Council to determine the approximate amount and type of bycatch occurring in the Hawaii MHI bottomfish fisheries, when combined with other sources of data. Therefore, no change is needed for the identification of the SBRM, but the FEP amendment is needed to add an explanation of how the HDAR fish catch report and the HMRFS creel survey meets the purpose for the SBRM. The proposed amendment based on this review is described in section 3.3.

Evaluation of the SBRM under the four review factors (§600.1610(a)(2)(i)-(iv)):

1) Bycatch characteristics
The amount of bycatch and mortality is estimated to be minimal from communication with fishermen as species are targeted by depth and aggregations, and the fishery uses selective hook and line gear. Also, fishermen report keeping much of the non-targeted species resulting in a lower expectation of bycatch. What is bycatch in this fishery, such as kahala (*Seriola dumerili*) and butaguchi (*Pseudocaranx dentex*), might be bycatch due to fear of worms or cituatoxins (WPRFMC 2009b).

Though the fishery in the NWHI is not active, the FEP does provide a summary of bycatch based on logbook data and an intermittent observer program. According to the bycatch amendment (WPRFMC 2002), the two data sets show the same general discard patterns. Two species, kahala (*Seriola dumerili*) and butaguchi (*Pseudocaranx dentex*), made up the majority of bycatch. Only 5 percent of kahala was retained, and 50–70 percent of butaguchi was retained. These and other species were generally discarded due to poor marketability because of ciguatera concerns.

2) Feasibility of methodology, from cost, technical, and operational perspectives

The FEP does not explicitly discuss the feasibility of maintaining SBRM, but the commercial fishing report is the largest and oldest dataset that HDAR has and has been collected and processed continuously since 1948. The commercial fishing report as well as the MHI Deep 7 Bottomfish Fishing Report form includes the number of pieces released. The methodology to collect bycatch data is already in place. On the noncommercial side, data has been collected by the HMRFS since 2003 and also includes a disposition code for each catch in numbers. The utility of this data would be improved if NMFS and the Marine Recreational Information Program (MRIP) developed an algorithm to expand the "thrown back" disposition code data and provide that information by species for analysis.

NMFS administers the federal logbook reporting for non-commercial bottomfish fishing, which is funded along with other federal reporting operations and is stable. HDAR administers the commercial marine license reporting program, and NMFS has provided additional funds to support "near real time" commercial catch monitoring for the Deep 7 bottomfish fishery. The HMRFS program is supported by the Wildlife and Sportfish Restoration program run by the U.S. Fish and Wildlife Service, which requires matching state funds. The costs for reporting this bycatch data would be embedded in the work of the Council's Plan Teams. The continued collection of the data is dependent upon HDAR's continued funding of the commercial reporting program, which has a long history and has been stable; however, the HMRFS data collection is dependent upon sportsfish funding and MRIP, and funding may not be as stable. HDAR has the lead role for operations and implementation of these programs, and coordinates with PIFSC WPacFIN as necessary. The FEP does not address how NMFS would adjust funding or implementation to the programs if there was a change in available funds.

Other potential options to gather bycatch data such as observer programs may provide more accurate and precise data, but generally cost more per unit of coverage and are likely to be cost-prohibitive in a small fishery. The small size of vessels in the fishery also makes the placement of observers difficult. Fishery independent research may provide useful supplemental information on bycatch, but these programs are often of limited duration and do not provide a long-term time series. These programs are not likely to be feasible in the fishery.

3) Uncertainty of data resulting from the methodology

The FEP does not explicitly discuss the uncertainty associated with the bycatch reporting methodologies. Similar to the bottomfish fisheries described above, uncertainty would be primarily associated with the degree to which fishermen accurately remember and report bycatch. Commercially, some uncertainty comes with self-reporting data and the delay in which reporting occurs. The MHI Deep 7 bottomfish fishery requires commercial trip reporting within five days of the end of the trip so there may be some recall uncertainty in remembering how

many pieces of each species were caught and returned to the water; non-commercial reports are due within three days. For the uku fishery, reporting is delayed up to one month. For the HMRFS creel surveys, there is also an unknown bias based on who was sampled at any given year, and variation in sampling effort and the number of interviews will affect this uncertainty.

4) How data resulting from the methodology are used to assess amount and type of bycatch occurring in the fishery

The Hawaii Archipelagic SAFE report for 2020 includes summaries of bycatch data for the bottomfish fishery, and the Council's Archipelagic Plan Team is working to improve these summaries to improve the bycatch assessment for the fishery. Analyses are not currently done on the total estimated amount of bycatch in the fishery but bycatch data collected through the SBRMs could be used in conjunction with other sources of data for this purpose.

If the Council identifies potential bycatch concerns based on data from the existing SBRMs, the Council may in the future recommend additional data collection efforts to improve those bycatch estimates to inform development of appropriate bycatch mitigation measures. Council advisory bodies such as the Plan Team and Advisory Panel may also identify potential bycatch concerns based on local expert knowledge.

2.4.2 Crustacean Fisheries

There are two active fisheries for crustacean MUS in Hawaii: deepwater shrimp (genus *Heterocarpus*) and Kona crab (*Ranina ranina*). All lobsters are classified as ECS, and are not included in the SBRM analysis. There is no federal permit, nor any state or federal reporting requirements for recreational fishery participants in the Kona crab fishery. The Kona crab fishery primary occurs on Penguin Bank, although landings occur across the MHI. Deepwater shrimp are found on the outer reef slopes and deepwater banks at depths of 200-1200 meters. The main gear types for shrimp are traps and for Kona crab are hoop or loop nets.

A permit is required by the owner of a U.S. fishing vessel used to deepwater shrimp in the EEZ around Hawaii. The permit expires 1 year after the date of issuance. Permit holders must submit a logbook to NOAA Fisheries within 72 hours of landing

In 2019, there were fewer than three permits for the MHI shrimp fishery and 23 licensees reporting catch in the Kona crab fishery. Fishermen harvested 5,650 lbs of Kona crab 2019 (WPRFMC 2020b). Due to data confidentiality requirements, there is no catch data to report for the 2019 harvest of shrimp. The NWHI portion of the fishery remains inactive, although SBRM are still implemented as detailed for the entire fishery.

Does the FEP identify an SBRM?

The Council established SBRM for the Hawaii crustacean fisheries through the 1998 FMP Amendment 10, which was carried forward in the 2009 Hawaii Archipelago FEP (Hawaii FEP). The Hawaii FEP identifies the State of Hawaii HDAR fish catch report required by the State CML as one data source for bycatch reporting, and this program is described in Section 2.1.2. The Hawaii SAFE report also provides detail on the CML reporting in sections 1.1.2 and 1.4.2. The Hawaii FEP also identifies as SBRM federal logbooks for deepwater shrimp and the

HMRFS program. However, HMRFS does not currently collect data on Kona crab or other invertebrates, although that may be reinstated in the future.

Observer coverage is also required when directed by NMFS (72 FR 43176), which could supplement bycatch but is not identified as an SBRM. There is currently no observer coverage occurring at this time.

Does the FEP contain an explanation of how the identified SBRM meets the purpose?
The purpose of SBRM, as well as the requirement that FMPs include an explanation of how the identified SBRM meets that purpose, were codified in regulations through the 2017 final rule, and were not available at the time the Council developed the 1998 Bycatch Amendment or the 2009 Hawaii FEPs. Therefore, the Council did not include an explicit explanation. However, the HDAR commercial reporting program and federal logbooks provide a means of collecting, recording, and recording bycatch data. The Hawaii FEP states that bycatch is summarized in the Council's annual SAFE reports.

Based on the review below, the SBRM identified for these fisheries meets the purpose by providing the means for the Council to determine the approximate amount and type of bycatch occurring in the Hawaii crustacean fisheries, when combined with other sources of data. While other data collection methodologies such as observer programs may provide more precise estimates of bycatch, the HDAR commercial reporting program and federal logbooks are appropriate SBRMs for this fishery due to the fishery characteristics and known bycatch characteristics. Therefore, no change is needed for the identification of the SBRM, but the FEP amendment is needed to add an explanation of how the HDAR commercial reporting program and federal logbooks meet the purpose for the SBRM. The proposed amendment based on this review is described in section 3.3.

Evaluation of the SBRM under the four review factors (§600.1610(a)(2)(i)-(iv)):

1) Bycatch characteristics
The Kona crab fishery is a targeted fishery that only harvests Kona crabs in loop nets that lay flat on the sand and do not regularly catch other species that would be discarded. However, HDAR regulations require the return of female Kona crab as well as a minimum size of 4 inches carapace length for this species. Regulatory discards of Kona crabs do occur, primarily of all female Kona crabs and undersized males; however, HDAR is considering removing the requirement to release all female Kona crabs, which would reduce bycatch. Wiley and Pardee 2018 found that up to 80 percent of captured Kona crabs had to be released under state regulations (Wiley and Pardee 2018). They also reported that depredation while crabs are on the loop nets is also common.

There was no information on the bycatch associated with the deepwater shrimp fishery at the time the FEP was developed, and to date SAFE reports have not included information about bycatch in the fishery. The 2020 SAFE report, to be published in June 2021, will include information on discards for the crustacean fisheries.

2) Feasibility of methodology, from cost, technical, and operational perspectives

The FEP does not explicitly discuss the feasibility of maintaining SBRM for these fisheries. The feasibility of the HDAR CML program is discussed in the section on the MHI bottomfish fishery (2.4.1), and the situation is similar for crustaceans. The commercial fishing report is the largest and oldest dataset that HDAR has, and it has been collected and processed continuously since 1948. The program is stable, and the long history of implementation indicates that it is feasible. The federal crustacean report is also supported along with other federal reporting programs, has been in place for several years, which indicates that it is feasible. As with other fisheries, the FEP does not provide guidance to NMFS on how to adjust implementation if funding changes.

For noncommercial fisheries, HMRFS has not collected non-finfish data recently. PIFSC and/or HDAR would incur marginal costs for data collection and analysis of crustaceans.

Other potential options to gather bycatch data such as observer programs may provide more accurate and precise data, but generally cost more per unit of coverage and are likely to be cost-prohibitive in a small fisheries. The small size of most vessels in the crustacean fisheries also makes the placement of observers difficult. Fishery independent research may provide useful supplemental information on bycatch (e.g., Wiley and Pardee 2018), but these programs are often of limited duration and do not provide a long-term time series. These programs are not likely to be feasible in the fishery.

3) Uncertainty of data resulting from the methodology

Commercially, uncertainty comes with self-reporting data and the delay in which reporting occurs. CML reports to HDAR are filed monthly, there may be some recall uncertainty in remembering how many pieces of each species were caught and returned to the water. Federal crustacean logbook reports are due within 72 hours of the end of each fishing trip. An additional source of uncertainty is depredation of Kona crabs before the nets are brought to the surface. Video recorded as part of the Wiley and Pardee study (2018) shows various types of predators taking crabs that are entangled in nets. These depredations may not be apparent to fishermen and are a source of uncertainty in bycatch and total mortality estimates.

4) How data resulting from the methodology are used to assess amount and type of bycatch occurring in the fishery

Data, if made available, could provide the species and quantity that are discarded in the MHI crustacean fisheries. Previous Hawaii SAFE reports have not included summaries of these data, but the 2020 and later SAFE reports will include summaries of bycatch. The Council's Archipelagic Plan Team is working to improve the bycatch assessment for the fishery. The most recent stock assessment for Kona crab also incorporated an estimate of discard mortality (Kapur et al. 2019).

If the Council identifies potential bycatch concerns based on data from the existing SBRMs, the Council may in the future recommend additional data collection efforts to improve those bycatch estimates to inform development of appropriate bycatch mitigation measures. Council advisory bodies such as the Plan Team and Advisory Panel may also identify potential bycatch concerns based on local expert knowledge.

2.4.3 Precious Coral Fishery

Hawaii's precious coral fishery is comprised of pink coral (*Pleurocorallium secundum*), red coral (*Hemicorallium laauense*), gold coral (*Kulamanamana haumeaae*), bamboo coral (*Acanella spp.*), and three black corals (*Antipathes griggi, A. grandis*, and *Myriopathes ulex*). Only selective gear may be used, including submersibles and hand harvest. There are no publicly available data for the precious coral fishery for the last ten years because the number of permit holders since 2007 has been fewer than three. The NWHI portion of this fishery is inactive.

Anyone harvesting precious corals is required to have a permit and can only harvest from designated management areas. The permit holder must complete and submit a federal logbook within 72 hours of landing. The logbook contains data on catch, effort, and other data. HDAR also requires a commercial marine license and commercial fishing report for the harvest of precious corals.

Does the FEP identify an SBRM?
The Council established SBRM for the Hawaii precious coral fisheries through the 1998 FMP Amendment 4, which was carried forward in the 2009 Hawaii FEP. The Hawaii FEP identifies two data sources for bycatch reporting: 1) the State of Hawaii HDAR fish catch report required by the State CML (this program is described in Section 2.1.2), and 2) federal logbooks. The Hawaii FEP also states that observer coverage is required if directed by NMFS[3]. The Hawaii SAFE report provides detail on the CML reporting in sections 1.1.2 and 1.4.2 (WPFMC 2020b).

Does the FEP contain an explanation of how the identified SBRM meets the purpose?
The purpose of SBRM, as well as the requirement that FMPs include an explanation of how the identified SBRM meets that purpose, were codified in regulations through the 2017 final rule, and were not available at the time the Council developed the 1998 Bycatch Amendment of the 2009 Hawaii FEP. Therefore, the Council did not include an explicit explanation. However, the HDAR commercial reporting program and federal logbooks provide a means of collecting, recording, and recording bycatch data, and bycatch could be summarized in the Council's annual SAFE reports.

Based on the review below, the SBRM identified for this fishery meets the purpose by providing the means for the Council to determine the approximate amount and type of bycatch occurring in the Hawaii precious coral fisheries, when combined with other sources of data. However, bycatch is not a concern in this fishery because of the highly selective gear types used and the fishery has had limited effort in recent years, Therefore, no change is needed for the identification of the SBRM, but the FEP amendment is needed to add an explanation of how the HDAR fish catch report and federal logbooks meet the purpose for the SBRM. The proposed amendment based on this review is described in section 3.3.

[3] Pursuant to the Endangered Species Act, NMFS may require fishing vessels in fisheries identified through an annual determination process to carry Federal observers (72 FR 43176, August 3, 2007).

Evaluation of the SBRM under the four review factors (§600.1610(a)(2)(i)-(iv)):

1) Bycatch characteristics

Due to the low number of permits, current data cannot be summarized in the SAFE report. However, no bycatch has been reported in the fishery. The precious coral fishery is highly selective, primarily using submersible or harvesting by hand. Non-selective gear such as dredges is not permitted in the fishery. There are minimum size restrictions in the fishery, but regulatory discards would be unlikely because harvesters can measure colonies prior to collecting them.

2) Feasibility of methodology, from cost, technical, and operational perspectives

HDAR's current data collection includes number of discards, but due to the harvesting method, this fishery is unlikely to have bycatch. NMFS permits and logbooks do not include bycatch because of this as well, though the forms could be modified if a bycatch issue was identified. The FEP does not explicitly discuss the feasibility of maintaining SBRM for this fishery. The feasibility of the HDAR CML program is discussed in the section on the MHI bottomfish fishery, and the situation is similar for precious corals. The commercial fishing report is the largest and oldest dataset that HDAR has, and it has been collected and processed continuously since 1948. The program is stable, and the long history of implementation indicates that it is feasible. The federal logbook report is also supported along with other federal reporting programs, has been in place for several years, which indicates that it is feasible. As with other fisheries, the FEP does not provide explicit guidance to NMFS on how to adjust implementation if funding changes.

3) Uncertainty of data resulting from the methodology

Uncertainty in the data would be similar to uncertainties in other logbook data from fisheries that are self-reporting. Unreported catches could be an uncertainty due to recall, non-reports, etc. but is not expected to be as high due to the low volume of fishing and because of the selectivity of the harvest methods.

4) How data resulting from the methodology are used to assess amount and type of bycatch occurring in the fishery

If there is any bycatch, the data from HDAR and NMFS could be provided and reported through the Annual SAFE Reports. The low number of participants in the fishery may make the data unavailable for most years; data may need to be aggregated over enough years so the data can be presented.

2.5 Pacific Remote Island Areas FEP

2.5.1 Bottomfish, Precious Corals, Coral Reef, and Crustacean Fisheries

All the PRIA non-pelagic fisheries are combined in this report into this section. Commercial fishing is only allowed in the EEZ from 50 nm to 200 nm of Howland and Baker Islands, Kingman Reef, and Palmyra Atoll. The EEZs of the remaining PRIA are closed to commercial fishing due to the Pacific Remote Islands Marine National Monument (PRIMNM).

Bottomfish. All bottomfish habitat in the PRIA falls within the boundaries of the PRIMNM, effectively prohibiting commercial bottomfish fishing in the PRIA. The State of Hawaii requires

that any person who takes marine life for commercial purposes obtain a Commercial Marine License (CML); CML holders are required to complete a reporting form for all fish caught in federal waters, including those caught in the PRIA and landed in Hawaii (WPRFMC 2002a). There is also a Pacific Remote Island Areas Bottomfish permit and reporting required by NMFS for anyone using bottomfish gear to fish for bottomfish management unit species in the EEZ around the PRIA, however commercial fishing is prohibited within the boundaries of the PRIMNM. The logbook reporting is how bycatch would be monitored for the PRIA bottomfish fishery.

The regulatory measure to reduce bycatch while bottomfish fishing is a gear restriction: fishing for bottomfish with bottom trawls and bottom set gillnets is prohibited and the possession or use of any poisons, explosives, or intoxicating substances for the purpose of harvesting bottomfish is prohibited (51 FR 27413, August 27, 1986; WPRFMC 2002a)

Crustaceans. There are currently no crustacean fisheries operating in the PRIA. The most recent attempt at a crustacean fishery in the PRIA was at Palmyra in 1999 for lobster and deepwater shrimp. All habitat for lobster and Kona crab fall within the boundaries of the PRIMNM, thus commercial fishing for those species is effectively prohibited. A Western Pacific Crustaceans Permit and logbook reporting are required for vessels targeting lobsters and deepwater shrimp in the PRIA, and observers could be required by NMFS. These would be the primary means through which bycatch would be documented.

There are currently no regulatory measures to reduce bycatch in the PRIA crustacean fishery.

Coral Reef Fisheries. No commercial coral reef fishery has occurred at Howland, Baker, Jarvis, or Kingman reefs. However recreational fishing for bonefish has occurred at Palmyra through the Nature Conservancy and the USFWS. Information on catch statistics is unavailable. No one lives on Johnston Island permanently; only small groups of volunteers periodically go there for a couple months (P.D. Brown, USAF, pers. comm., 2/27/21). There is no information available for coral reef catches at Wake Island, which houses military installations and research facilities. However, the populations at Wake are low (130 people; P.D. Brown, USAF, pers. comm., 2/27/21), so the potential impacts of a subsistence fishery is likely negligible. Commercial fisheries are now prohibited because the coral reef habitat falls exclusively within the boundaries of the PRIMNM. Special Coral Reef Ecosystem Permits and logbooks are required for any directed coral reef fishery in the PRIA which would allow the Council and NMFS to identify participants, collect harvest and effort data, and control harvests. This would be the data collection through which bycatch data is collected.

There is no information on the bycatch of PRIA's coral reef fishery. If a future fishery is established, bycatch reporting would be required through the existing permit and logbook currently in place. There are gear restrictions in place to protect habitat and reduce bycatch.

Precious Coral Fisheries. No federal permits have been issued to harvest precious corals in the PRIA EEZ. However, this does not preclude any future permit issuance. There are no known extensive precious coral beds or harvests of precious corals in the PRIA. Federal permits and reporting are required for any vessel harvesting precious corals in the PRIA EEZ. However, much of the waters are excluded from commercial harvest due to the PRIMNM. Precious coral

harvesting is highly selective, thus does not have bycatch associated with it, as demonstrated by the Hawaii precious coral fishery. Reporting associated with federal permits would identify any bycatch.

To reduce the potential for bycatch, only selective gear can be used to harvest precious corals in the PRIA.

Does the FEP identify an SBRM?
The 2009 FEP identifies federal logbooks as SBRMs for the bottomfish, coral reef ecosystem, precious coral, and crustacean fisheries in the PRIAs.

Does the FEP contain an explanation of how the identified SBRM meets the purpose?
The purpose of SBRM, as well as the requirement that FMPs include an explanation of how the identified SBRM meets that purpose, were codified in regulations through the 2017 final rule, and were not available at the time the Council developed its FEPs. Therefore, the PRIA FEP does not include an explicit explanation. However, the federal logbooks provide a means of collecting, recording, and recording bycatch data, and bycatch could be summarized in the Council's annual SAFE reports when available.

Based on the review below, the SBRM identified for this fishery meets the purpose by providing the means for the Council to determine the approximate amount and type of bycatch occurring in the PRIA fisheries, when combined with other sources of data. However, bycatch is not a concern for fisheries under the PRIA FEP because of the lack of active fishing effort. No change is needed for the identification of the SBRM, but the FEP amendment is needed to add an explanation of how the federal logbooks meets the purpose for the SBRM. The proposed amendment based on this review is described in section 0.

Evaluation of the SBRM under the four review factors (§600.1610(a)(2)(i)-(iv)):

1) Bycatch characteristics
NMFS has issued bottomfishing permits in the PRIA but has not received any reports of bottomfishing activity. There are no current precious coral, coral reef, or crustacean fisheries operating in the PRIA due to a prohibition on commercial fishing by the PRIMNM and the remoteness of the islands for non-commercial fishing. However, federal permits and logbooks are required should fishing occur. Included in the daily logbook is a requirement to enter the number released by species for all fish caught. Additionally, the Crustacean Daily Catch Report requires pounds discarded as well. This data would be available for determining bycatch in the fisheries. Most of the fishing that does occur in the PRIA is done for pelagic species for which permits and logbooks are required (See information for fisheries managed under the Pelagic FEP in sections 2.1.3 and 2.6.1).

2) Feasibility of methodology, from cost, technical, and operational perspectives
Federal permits and reporting is required for fisheries in the PRIA. The FEP does not explicitly discuss the feasibility of maintaining SBRM for this fishery. However, the federal logbook report is funded along with other federal reporting programs and has been in place for several years, which indicates that it is feasible. As with other fisheries, the FEP does not provide explicit guidance to NMFS on how to adjust implementation if funding changes, though the cost of

maintaining the federal logbook program for PRIA fisheries in combined with other programs, is well-established, and can be considered stable.

3) Uncertainty of data resulting from the methodology

Uncertainty in the data would be similar to any uncertainties in federal logbook data from fisheries that are self-reporting. Unreported catches could be an uncertainty due to recall, non-reports, etc. but is not expected to be as high due to the low volume of fishing currently.

4) How data resulting from the methodology are used to assess amount and type of bycatch occurring in the fishery

The data on the number released by species can provide the type and quantify the amount of bycatch occurring in the fishery. If active fisheries existed so that reports were available, this information would be summarized in the Annual SAFE report.

2.6 Pacific Pelagic FEP

2.6.1 Longline Fisheries

Any vessel fishing with longline gear throughout the entire range of the PMUS, transshipping longline-caught fish within the EEZ of the Western Pacific Region, or landing longline-caught fish in Hawaii, American Samoa, Guam, the Northern Mariana Islands, and the US possessions in the Pacific require a federal permit issued by the NMFS (WPRFMC 1991a). Longline fishing vessels are required to keep daily records of fishing effort and catches of PMUS as well as observations of encounters with protected species in a daily logbook and submit the data within a required period. US vessels transshipping longline-caught fish must also keep a transshipment log. All fishing vessels with a pelagic permit must carry an on-board observer when directed to do so by NMFS. The federal logbooks and observer coverage both collect data on bycatch.

2.6.1.1 Hawaii and American Samoa Longline Fisheries

The Hawaii longline fishery consists of approximately 150 active vessels operating under the Hawaii longline limited entry permit based out of Hawaii and California ports. Deep- and shallow-set landings in 2019 were almost 33 million pounds combined. Landings are predominantly bigeye and yellowfin tuna, as well as swordfish, blue and striped marlin, spearfish, moonfish, and ono.

The American Samoa longline fishery estimated annual pelagic landings have varied from 2.9 to 11 million pounds from 2009 to 2019 (WPRFMC 2020e). Pelagic landings consist primarily of albacore, yellowfin, skipjack and bigeye tuna. Wahoo, blue marlin, and swordfish are also landed. There were 17 vessels fishing in American Samoa in 2019.

Does the FEP identify an SBRM?

The Council established SBRM for the Hawaii and American Samoa longline fisheries through the 2002 Pelagics FMP Amendment 8 (Supplement), and modified in the 2009 Pelagics FEP. For the Hawaii longline fishery, the 2002 Pelagics FMP Amendment 8 (Supplement) identified the Hawaii longline observer program, Western Pacific daily longline fishing log, and HDAR longline trip reports as SBRMs, and the 2009 Pelagics FEP later removed the HDAR longline trip report from the SBRM. For the American Samoa longline fishery, the 2002 Pelagics FMP

Amendment 8 (Supplement) identified the Western Pacific daily longline fishing log and the American Samoa DMWR offshore creel survey as SBRMs, and the 2009 Pelagic FEP added the observer program to the SBRM to reflect the program's establishment in 2006. These data collection methods are described above in sections 2.1.1 and 2.1.3.

Does the FEP contain an explanation of how the identified SBRM meets the purpose?
The purpose of SBRM as well as the requirement that FMPs include an explanation of how the identified SBRM meets that purpose were codified in regulations through the 2017 final rule, and were not available at the time the Council developed the 2002 Pelagics FMP Amendment 8 (Supplement) and the 2009 Pelagics FEP. Therefore, no explicit explanation to meet this requirement is included in the existing FEP. However, the federal logbooks provide a means of collecting, recording, and recording bycatch data, and bycatch information is summarized in the Council's annual SAFE reports. The federal logbook for the Hawaii longline fishery included reporting requirements for target and non-target catch and discard as well as protected species interactions since its implementation in 1991. The mandatory NMFS observer program for these fisheries initiated in 1994 in Hawaii and in 2006 in American Samoa also focuses on collecting data on protected species interactions as well as recording details on fishing effort and retention and discard of finfish by species.

Based on the review below, the SBRM identified for these fisheries meets the purpose by providing the means for the Council to determine the approximate amount and type of bycatch occurring in the fisheries, when combined with other sources of data.

Although Amendment 8 identified offshore creel survey as SBRM for the American Samoa longline fishery, the FEP has since established the limited entry program and observer coverage for this fishery. Thus, the offshore creel survey is no longer used to collect longline data in American Samoa. An FEP amendment is needed to remove this method from the identification of SBRM. Additionally, an amendment is needed to add an explanation of how the federal logbook and observer program for the Hawaii and American Samoa longline fisheries meet the purpose for the SBRM. The proposed amendment based on this review is described in section 3.5.

Evaluation of the SBRM under the four review factors (§600.1610(a)(2)(i)-(iv)):

1) Bycatch characteristics
Amendment 8 to the Pelagic FEP states that bycatch information will be summarized in SAFE reports. The main bycatch species in the Hawaii and American Samoa longline fisheries are shark species, which have low or no demand, and nearly all shark species caught are released. Retention of oceanic whitetip and silky sharks has been prohibited since 2015 (80 FR 8807). Fish are released for various reasons including quality, handling and storage difficulties, and marketing problems (WPRFMC 2020e).

Hawaii. The 2019 SAFE report for pelagic fisheries reports that 21 percent of the deep-set catch were released, primarily comprised of bigeye and yellowfin tuna, striped marlin and spearfish, oilfish, and nearly all sharks (WPRFMC 2020e). In 2019, sharks accounted for 87 percent of the total Hawaii deep-set longline bycatch, of which 99.6 percent was released. In the shallow-set fishery, 39.5 percent of the catch was released, comprised primarily of bigeye, swordfish, oilfish,

and blue sharks (WPRFMC 2020e). Sharks accounted for 94 percent of the total Hawaii shallow-set longline bycatch, 97 percent of which was released (WPRFMC 2020e). The bycatch rate was 3 percent for targeted and incidentally caught pelagic species for the deep-set longline fishery and 4 percent for targeted and incidentally-caught species for the shallow-set longline fishery in 2019. Since shallow-set longline trips are often longer than deep-set trips, the higher release rate by the shallow-set sector is to conserve space for swordfish and forego keeping other pelagic species due to their short shelf life (WPRFMC 2020e).

American Samoa. Around 1.2 percent of the tuna catch was released in 2019 (WPRFMC 2020e). Yellowfin and bigeye were the most released bycatch tuna species in 2019 at 3.2 and 3.0 percent, respectively. Sharks and oilfish had the highest release numbers of non-tunas, with nearly 100 percent of each species released. In total, only 7 percent of all pelagic species caught were released in 2019.

The Hawaii and American Samoa longline fisheries also have interactions with protected species, including sea turtles, marine mammals, seabirds, and ESA-listed elasmobranch species (scalloped hammerhead shark, oceanic whitetip shark, and giant manta ray). The observer program for these fisheries focuses on data collection protected species interactions in addition to gathering data on fishing effort, catch and fish bycatch composition.

2) Feasibility of methodology, from cost, technical, and operational perspectives

American Samoa. In addition to federal logbooks, the observer program is used to collect data on landings and bycatch, including protected species interactions. Detailed survey methodology is described in section 2.1.3. The funding for the data compilation is in part from the Interjurisdictional Fisheries Act. The costs for the federal logbook and observer programs are covered by NMFS at no cost to fishery participants, and are expected to remain as such for the foreseeable future. Based on the ongoing data collection through federal logbooks, this methodology is feasible from all three perspectives.

Hawaii. The federal logbook data and observer data are used to assess bycatch including protected species interactions in the Hawaii longline fishery. The costs for the federal logbook and observer programs are covered by NMFS at no cost to fishery participants, and are expected to remain as such for the foreseeable future. Mandatory electronic logbooks were implemented for the Hawaii longline fishery in September 2021, with the cost (including tablets, data transmission, and data management) covered by NMFS. Based on the ongoing data collection through federal logbooks and observer coverage, this methodology is feasibly from all three perspectives.

3) Uncertainty of data resulting from the methodology

In establishing SBRM in the 2002 Pelagics FMP Amendment 8 (Supplement), the Council considered the relative precision and uncertainties for each of the data collection systems (WPRFMC 2002). The most reliable and precise source of bycatch data (for a given trip) is vessel observer programs. The precision associated with fishery-wide catch and bycatch estimates derived from the data is a function of the proportion of fishing trips that are observed and the frequency of encounters for a given species. Vessel logbook programs have the advantage of high degrees of coverage but have the disadvantage of relying solely on fishermen to record detailed information about many species, many of which are difficult to distinguish. In

the case of protected species, fishermen may be disinclined to report interactions, such as if they believe a high interaction rate will lead to restrictions on the fishery.

The logbook form includes data fields for recording the number of non-PMUS species kept and discarded, but because the space is limited, the catch and bycatch of non-PMUS are substantially underreported (this shortcoming in the log is by design, as modifying the log to accommodate full reporting of non-PMUS would place an additional burden on fishermen and likely compromise the reliability of the PMUS data). Bycatch data for non-PMUS can be supplemented through observer data.

The Hawaii shallow-set longline fishery has been observed at 100 percent coverage since 2004, and the Hawaii deep-set and American Samoa longline fisheries are observed at a target of 20 percent coverage. PIFSC generates total bycatch estimates for the deep-set and American Samoa longline fisheries. Observer coverage level is determined by PIRO, but the Council periodically reviews sufficiency of observer coverage to meet management objectives on an as-needed basis.

4) How data resulting from the methodology are used to assess amount and type of bycatch occurring in the fishery

Fish bycatch data from the Hawaii and American Samoa longline logbooks are reported in the Annual SAFE report in terms of number and percent released at the species level. Protected species interactions from observer data are also summarized in the Annual SAFE report, with annual summaries of total number of interactions and number observed dead for all sea turtle, marine mammal, seabird and ESA-listed elasmobranch species. The Annual SAFE report is reviewed by several Council advisory bodies including the SSC.

Data from logbooks and observer programs for the Hawaii and American Samoa longline fisheries provide reliable information on the amount and type of bycatch occurring in these fisheries. These data may be further supplemented by research and tagging data on an as-needed basis to assess post-release mortality, unobserved mortality, and other bycatch-related information that cannot be readily collected through logbook or observer data programs to inform development of any conservation and management measures to minimize bycatch and bycatch mortality.

2.6.1.2 Western Pacific General Longline Fisheries

The longline fisheries in the PRIA, Guam and CNMI fall under the Western Pacific general longline permit. However, there are no active Western Pacific general longline permits. The Western Pacific longline permit requires federal logbook reporting, which includes data capture of bycatch. Observers are required when directed under the Endangered Species Act, which also provides bycatch data.

Does the FEP identify an SBRM?

The Council established the Western Pacific daily longline fishing log as an SBRM for the Hawaii- and American Samoa-based longline fisheries through the 2002 Pelagics FMP Amendment 8 (Supplement) and carried this forward in the 2009 Pelagics FEP. The same logbook would be used for longline fisheries in Guam, the PRIA or the CNMI, but there were no vessels active in Guam or the CNMI at that time, and the original bycatch amendment and the

2009 FEP did not explicitly identify an SBRM for the Western Pacific general longline fisheries. Therefore, the logbook would be added as an SBRM in this amendment.

Observer program coverage, if required under the ESA, can be instated (72 FR 43176). However, an observer program for vessels operating under the Western Pacific general longline permit have not been established under the Pelagic FEP, and thus observer data is not identified as an SBRM for this fishery.

Does the FEP contain an explanation of how the identified SBRM meets the purpose?
When the Council developed the 2002 Pelagics FMP Amendment 8 (Supplement) and the 2009 Pelagics FEP, it did not explicitly state how the SBRM meets the purpose of bycatch reporting because that requirement was not codified until 2017. However, the federal logbooks provide a means of collecting and recording data, and bycatch information would be reported in the Council's annual SAFE reports.

Based on the review below, the SBRM identified for these fisheries meets the purpose by providing the means for the Council to determine the approximate amount and type of bycatch occurring in the fisheries, when combined with other sources of data. An FEP amendment is needed to explicit identify an SBRM for the Western Pacific general longline fisheries, and to add an explanation of how the federal logbook meets the purpose for the SBRM. The proposed amendment based on this review is described in section 3.5.

Evaluation of the SBRM under the four review factors (§600.1610(a)(2)(i)-(iv)):

1) Bycatch characteristics
There are currently no permits issued under the Western Pacific general longline permit, thus there are no characteristics of the bycatch to report. However, these characteristics would be identified in data analysis of logbooks should a fishery develop.

2) Feasibility of methodology, from cost, technical, and operational perspectives
Detailed survey methodology for federal logbooks is described in section 2.1.3 and logbooks already exist. Based on implementation of observer coverage for other longline fisheries in Hawaii and American Samoa, it is feasible to implement should a fishery develop. However, the cost for implementing observer coverage may incur additional costs than those associated with observer coverage in American Samoa or Hawaii.

3) Uncertainty of data resulting from the methodology
In establishing SBRM in the 2002 Pelagics FMP Amendment 8 (Supplement), the Council considered the relative precision and uncertainties for each of the data collection systems (WPRFMC 2002). The most reliable and precise source of bycatch data (for a given trip) is vessel observer programs. The precision associated with fishery-wide catch and bycatch estimates derived from the data is a function of the proportion of fishing trips that are observed and the frequency of encounters for a given species. Vessel logbook programs have the advantage of high degrees of coverage but have the disadvantage of relying solely on fishermen to record detailed information about many species, many of which are difficult to distinguish.

With observer data, PIFSC would generate total bycatch estimates and associated statistical uncertainties. The observer coverage level would be determined by PIRO in consultation with PIFSC, the Council and the SSC.

4) How data resulting from the methodology are used to assess amount and type of bycatch occurring in the fishery

Fish bycatch data from Western Pacific general longline logbooks would be summarized in the Annual SAFE report in terms of number and percent released at the species level should a fishery arise and is large enough that the data are not confidential. The bycatch data from logbooks would provide an approximate estimate of the amount and type of bycatch in the fishery. If the Council identifies potential bycatch concerns based on the logbook data, the Council may in the future recommend additional data collection efforts to improve those bycatch estimates to inform development of appropriate bycatch mitigation measures. Council advisory bodies such as the Plan Team and Advisory Panel may also identify potential bycatch concerns based on local expert knowledge.

2.6.2 Troll Fisheries

The troll fisheries are also referred to as small-boat fisheries. There are troll fisheries in Hawaii, American Samoa, Guam, and CNMI.

2.6.2.1 Hawaii

The Hawaii troll fisheries targets tunas, marlins, and other PMUS. In 2019, there were 1,291 fishers who harvested approximately 2.46 million pounds. There were 775 HDAR CMLs reporting trolling as the primary fishing method in 2019 (WPRFMC 2020e).

Does the FEP identify an SBRM?

The Council established SBRM for the Hawaii small-boat pelagic fishery, which consists of troll and handline, through the 2002 Pelagics FMP Amendment 8 (Supplement), which as carried forth in the 2009 Pelagics FEP. The 2002 Pelagics FMP Amendment 8 (Supplement) and the 2009 Pelagics FEP identify HDAR's CML Fish Catch Report and NMFS and HDAR's HMRFS as SBRMs for this fishery. HDAR's commercial reporting system was updated and the current status is documented above in Section 2.1.2 and the introduction to this section. Through the HDAR fish catch report, fishermen record and report data on the number of lost and released fish by species. Information on the implementation of HMRFS creel surveys is also found in annual SAFE reports.

Does the FEP contain an explanation of how the identified SBRM meets the purpose?

When the Council developed the 2002 Pelagics FMP Amendment 8 (Supplement) and 2009 Pelagics FEP, it did not explicitly state how the SBRM meets the purpose of bycatch reporting because that requirement was not codified until 2017. However, the HDAR's CML Fish Catch Report and HMRFS surveys provide a means of collecting, recording, and recording bycatch data, and bycatch information could be summarized in the Council's annual SAFE reports.

Based on the review below, the SBRM identified for these fisheries meets the purpose by providing the means for the Council to determine the approximate amount and type of bycatch

occurring in the fisheries, when combined with other sources of data. Therefore, no change is needed for the identification of the SBRM, but the FEP amendment is needed to add an explanation of how the HDAR fish catch report and the HMRFS creel survey meets the purpose for the SBRM. The proposed amendment based on this review is described in section 3.5.

Evaluation of the SBRM under the four review factors (§600.1610(a)(2)(i)-(iv)):

1) Bycatch characteristics

In general, bycatch in the small-boat troll and pelagic handline fisheries in all the island groups is small because the gears are selective and most captured species are desired for sale or personal consumption (WPRFMC 2002). Bycatch data for the Hawaii small-boat troll fishery are collected and reported through the CML reports and HMRFS, but there are currently no bycatch data summarized for the troll fishery in the SAFE report. However, one 2019 Plan Team recommendation is to present bycatch data including species and amount for the Hawaii small-boat (i.e. troll) fishery, and efforts are ongoing to include bycatch summaries in future reports.

2) Feasibility of methodology, from cost, technical, and operational perspectives

The FEP does not explicitly discuss the feasibility of maintaining SBRM, but the commercial fishing report is the largest and oldest dataset that HDAR has and has been collected and processed continuously since 1948. The commercial fishing report includes the number of pieces released. The methodology to collect bycatch data is already in place. However, the ability to access and analyze the bycatch data is dependent upon HDAR providing that information to analyze. On the non-commercial side, data has been collected by HMRFS since 2003 and also includes a disposition code for each catch in numbers. The utility of this data would be improved if NMFS and the Marine Recreational Information Program (MRIP) developed an algorithm to expand the "thrown back" disposition code data and provide that information by species for analysis.

The HMRFS program is supported by the Wildlife and Sportfish Restoration program run by the U.S. Fish and Wildlife Service, which requires matching state funds. The costs for monitoring reporting this bycatch data would be embedded in the work of the Council's Plan Teams. The continued collection of the commercial data is dependent upon HDAR's continued funding of the commercial reporting program, which has a long history and has been stable; however, the HMRFS data collection is dependent upon Sportfish Restoration program funding and MRIP, and funding may not be as stable. HDAR has the lead role for operations and implementation of these programs, and coordinates with PIFSC WPacFIN as necessary. The FEP does not address how NMFS would adjust funding or implementation to the programs if there was a change in available funds.

Other potential options to gather bycatch data such as observer programs may provide more accurate and precise data, but generally cost more per unit of coverage and are likely to be cost-prohibitive in a small-boat fishery. The small size of vessels in the fishery also makes the placement of observers difficult. Fishery independent research may provide useful supplemental information on bycatch, but these programs are often of limited duration and do not provide a long-term time series. These programs are not likely to be feasible in the fishery.

3) Uncertainty of data resulting from the methodology

The FEP does not explicitly discuss the uncertainty associated with the bycatch reporting methodologies. Similar to the Hawaii bottomfish fisheries described above, uncertainty would be primarily associated with the degree to which fishermen accurately remember and report bycatch. Commercially, some uncertainty comes with self-reporting data and the delay in which reporting occurs since reporting is delayed up to one month. For the HMRFS creel surveys, there is also an unknown bias based on who was sampled at any given year, and variation in sampling effort and the number of interviews will affect this uncertainty. The reporting associated with a CML has the advantage of high degrees of coverage but have the disadvantage of relying solely on fishermen to record detailed information about many species, many of which are difficult to distinguish and recorded 'after the fact,' which can cause unintentional misreporting due to recollection of the fishers. As a creel survey the HMRFS sampling, which relies on direct observations of landings and interviews with fishermen just after reaching port, is generally thought to yield reliable information about landings and somewhat reliable information about bycatch (WPRFMC 2002). The latter is limited by the memories of fishermen and the difficulties in accurately identifying fish to the species level. Like vessel observer data, the precision associated with fishery-wide estimates derived from HMRFS is a function of sampling intensity.

4) How data resulting from the methodology are used to assess amount and type of bycatch occurring in the fishery

To date, the data collected from the CML reporting and HMRFS surveys have not been used to assess the amount and type of bycatch occurring in the fishery, and efforts are ongoing to include bycatch summaries in future annual SAFE reports.

If the Council identifies potential bycatch concerns based on data from the existing SBRMs, the Council may in the future recommend additional data collection efforts to improve those bycatch estimates to inform development of appropriate bycatch mitigation measures. Council advisory bodies such as the Plan Team and Advisory Panel may also identify potential bycatch concerns based on local expert knowledge.

2.6.2.2 American Samoa, Guam, and CNMI

American Samoa. There were five vessels trolling in American Samoa in 2019 that harvested predominantly skipjack and yellowfin tuna, and small amounts of mahimahi, blue marlin, wahoo, sailfish, and kawakawa (WPRFMC 2020a).

Guam. 472 vessels participated in Guam's pelagic fishery in 2019 (WPRFMC 2020a). They harvested predominantly skipjack and yellowfin tuna, mahimahi, wahoo, and blue marlin. The Guam troll fishery includes charter and non-charter vessels.

CNMI. There were 49 vessels reporting pelagic landings in 2019. The CNMI troll fishery includes charter and non-charter vessels. Harvest includes predominantly skipjack and yellowfin tunas, mahimahi, wahoo, blue marlin, dogtooth tuna, and rainbow runner (WPRFMC 2020a).

Does the FEP identify an SBRM?

The Council established SBRMs for the American Samoa, Guam, and CNMI small-boat pelagic fisheries through the 2002 Pelagics FMP Amendment 8 (Supplement), which as carried forth in

the 2009 Pelagics FEP. The 2002 Pelagics FMP Amendment 8 (Supplement) and the 2009 Pelagics FEP identify American Samoa DMWR, Guam DAWR and CNMI DFW offshore creel survey as the SBRMs for these fisheries. The offshore creel surveys for these areas are described above in section 2.1.1 and in the annual SAFE reports. The creel surveys for fishing effort and catch cover multiple periods within the day, days in the week and different regions of shoreline and boat ramps or marina. As part of these surveys, staff from American Samoa DAWR, Guam DAWR, and CNMI DFW ask fishermen if they released any fish and the state of disposition to collect data on bycatch. Creel surveys collect bycatch data on species, number and/or weight, and condition (live, dead/injured).

Does the FEP contain an explanation of how the identified SBRM meets the purpose?
When the Council developed the 2002 Pelagics FMP Amendment 8 (Supplement) and 2009 Pelagics FEP, it did not explicitly state how the SBRM meets the purpose of bycatch reporting because that requirement was not codified until 2017. However, the creel surveys provide a means of collecting, recording, and recording bycatch data, and bycatch information are summarized in the annual SAFE reports.

Based on the review below, the SBRM identified for these territorial troll fisheries meets the purpose by providing the means for the Council to determine the approximate amount and type of bycatch occurring in the fisheries, when combined with other sources of data. While other data collection methodologies such as logbooks and observer programs may provide more precise estimates of bycatch, the creel survey is an appropriate SBRM for these fisheries due to the fishery characteristics and known bycatch characteristics (using selective gear that retains most fish species caught). Therefore, no change is needed for the identification of the SBRM, but the FEP amendment is needed to add an explanation of how the creel survey meets the purpose for the SBRM. The proposed amendment based on this review is described in section 3.5.

Evaluation of the SBRM under the four review factors (§600.1610(a)(2)(i)-(iv)):

1) Bycatch characteristics
Bycatch in the small-boat troll fisheries in all the island groups is, in general, small because the gears are very selective and most captured species are desired for sale or personal consumption (WPRFMC 2002).

Bycatch in the American Samoa troll fishery consisted of zero released fish across 49 interviews (WPRFMC 2020a). Bycatch occasionally occurs in the Guam non-charter troll fishery and predominantly includes sharks, shark-bitten and undersized fish. There is very low bycatch in the charter fishery, with only 150 reported bycatch out of 7,799 fish caught (WPRFMC 2020a). Bycatch is not an issue in CNMI because fishermen retain their catch regardless of species, size, or condition. There were no fish reported as bycatch in the trolling fisheries creel survey interviews from 2007-2019 (WPRFMC 2020a).

2) Feasibility of methodology, from cost, technical, and operational perspectives
American Samoa DAWR, Guam DMWR, and CNMI DFW conduct the fishery data collection in their respective jurisdictions. Detailed survey methodology is described in section 2.1.1. The creel survey methodology in collecting bycatch information is highly feasible, as demonstrated

by the more than 15 years the CNMI creel survey has occurred and more than 30 years for the American Samoa and Guam creel surveys.

The cost of implementation of bycatch monitoring is embedded in the creel survey itself, so there is not a separate, additional cost to address bycatch. The surveys are supported through the Cooperative Agreement between territorial resource management agencies and USFWS-Sportfish Restoration Funds, NOAA PIRO Interjurisdictional Fisheries Act funds, and NOAA-PIFSC WPacFIN funds. The funding may fluctuate but base-funding to support the operations is somewhat stable, thus the methodology is able to monitor bycatch over time. The FEP does not address how NMFS should adjust funding to these programs if there is a change in available funds.

3) Uncertainty of data resulting from the methodology

Creel surveys, which rely on direct observations of landings and interviews with fishermen just after reaching port, generally yield very reliable information about landings and somewhat reliable information about bycatch (WPRFMC 2002). The latter is limited by the memories (and sometimes truthfulness) of fishermen and the difficulties in accurately identifying fish, mammals, sea turtles, and seabirds to the species level (WPRFMC 2002). The precision associated with fishery-wide estimates derived from creel surveys is a function of sampling intensity (WPRFMC 2002).

The bycatch data is from the raw count of number of individual caught and number that is retained. The difference between the two is the bycatch (fish released). There are uncertainties from the raw count because not all trips are being accounted for. There is an unknown bias based on who was sampled at any given year.

Lastly, there is a degree of uncertainty in bycatch estimates in CNMI because the boat based creel survey only occurs on the island of Saipan. There is an effort to expand the data collection program to Tinian and Rota, although securing long term funding has proved challenging. Similarly in American Samoa, the creel survey program has not been able to maintain consistent staffing in Manua.

4) How data resulting from the methodology are used to assess amount and type of bycatch occurring in the fishery

For annual SAFE reports (e.g., WPRFMC 2020a), bycatch is calculated as follows: Bycatch is calculated as follows: the number caught is the sum of the total number of individuals found in the raw data including bycatch. The number kept is the total number of individuals in the raw data that are not marked as bycatch. The number released is bycatch caught minus the number of bycatch kept. Percent bycatch is the sum of all bycatch divided by the total catch.

As indicated in the FEP, the creel survey bycatch data are summarized in the Annual SAFE Reports. When combined with other sources of data, this information can provide the means for the Council to determine the approximate amount and type of bycatch occurring in the American Samoa, Guam and CNMI troll fisheries. If the Council identifies potential bycatch concerns based on creel survey data, the Council may in the future recommend additional data collection efforts to improve those bycatch estimates to inform development of appropriate bycatch

mitigation measures. Council advisory bodies such as the Plan Team and Advisory Panel may also identify potential bycatch concerns based on local expert knowledge.

2.6.3 PRIA Small-boat Pelagic Fisheries

Regulatory Amendment 2 to the Pelagics FMP implemented permit and logbook requirements for any fishing vessel using troll or handline gear in the EEZ waters of the PRIA. One of the reasons for implementing permitting and logbook requirements was to determine and minimize bycatch, and to document protected species interactions. No fishery currently exists.

Does the FEP identify an SBRM?
The troll/handline federal logbooks and HDAR fishing catch reports (commercial only if landed in Hawaii), as well as HMRFS (if landed in Hawaii) are identified as SBRM for the PRIA small-boat pelagic fishery. The USFWS Midway Sports Fishing Boat Trip log is also identified as an SBRM; however, since commercial and recreational fishing are not permitted under Presidential Proclamation 8031, there is no sportfishing allowed in the Papahānaumokuākea Marine National Monument or the Midway Atoll Special Management Area, so NMFS is not receiving fishing logbooks. An observer may be required under the ESA (72 FR 43176), but the observer program is not identified as SBRM.

Does the FEP contain an explanation of how the identified SBRM meets the purpose?
The purpose of SBRM, as well as the requirement that FMPs include an explanation of how the identified SBRM meets that purpose, were codified in regulations through the 2017 final rule, and were not available at the time the Council developed Amendment 2 to the Pelagics FMP or the FEPs. Therefore, the Council did not include an explicit explanation.

Based on the review below, the SBRM identified for these fisheries meets the purpose by providing the means for the Council to determine the approximate amount and type of bycatch occurring in the fisheries, when combined with other sources of data. However, bycatch is not a concern for this fishery because of the lack of active fishing effort. No change is needed for the identification of the SBRM, but the FEP amendment is needed to add an explanation of how the SBRMs identified for this fishery meets the purpose. The proposed amendment based on this review is described in section 3.5.

Evaluation of the SBRM under the four review factors (§600.1610(a)(2)(i)-(iv)):

1) ***Bycatch characteristics***

There are no current small-boat pelagic fisheries operating in the PRIA due to a prohibition on commercial fishing by the PRIMNM and the remoteness of the islands for non-commercial fishing. However, federal permits and logbooks are required should fishing occur..

2) ***Feasibility of methodology, from cost, technical, and operational perspectives***

Federal permits and reporting are required for fisheries in the PRIA. Included in the daily logbook is a requirement to enter the number released by species for all fish caught.

3) Uncertainty of data resulting from the methodology

Uncertainty in the data would be similar to any uncertainties in federal logbook data from fisheries that are self-reporting. Unreported catches could be an uncertainty due to recall, non-reports, etc. but is not expected to be as high due to the low volume of fishing currently.

4) How data resulting from the methodology are used to assess amount and type of bycatch occurring in the fishery

The data on the number released by species can provide the type and quantify the amount of bycatch occurring in the fishery. This information would be summarized the Annual SAFE reports developed by the Council and NMFS, when data are available.

2.6.4 Hawaii Handline Fisheries

There are handline fisheries in Hawaii, which are separated into offshore and MHI fisheries. The MHI handline fishery typically fishes the medium-sized tuna found on FADs and near the MHI. The offshore fishery occurs at Cross Seamount approximately 150 miles southwest of Hawaii Island and at offshore weather buoys. The offshore fishery is distinct from the MHI fishery due to differences in fishing grounds, trip characteristics, fishing methods, and landings. Separate catch and effort statistics have been reported by HDAR and NMFS since 1990 (WPRFMC 2009e).

There were 438 fishers in the 2019 MHI handline fishery that harvested approximately 675,000 lbs of yellowfin, albacore, and bigeye tunas. Seven offshore handline fishers harvested approximately 470,000 lbs of bigeye and yellowfin tuna, and mahimahi.

Does the FEP identify an SBRM?

The Council established SBRM for the Hawaii small-boat pelagic fishery, which includes troll and handline, through the 2002 Pelagics FMP Amendment 8 (Supplement), which as carried forth in the 2009 Pelagics FEP. The 2002 Pelagics FMP Amendment 8 (Supplement) and the 2009 Pelagics FEP identify HDAR's CML Fish Catch Report and NMFS and HDAR's HMRFS as SBRMs for this fishery. HDAR's commercial reporting system was updated and the current status is documented above in Section 2.1.2 and the introduction to this section. Through the HDAR fish catch report, fishermen record and report data on the number of lost and released fish by species. Information on the implementation of HMRFS creel surveys is also found in annual SAFE reports.

Does the FEP contain an explanation of how the identified SBRM meets the purpose?

When the Council developed the 2002 Pelagics FMP Amendment 8 (Supplement) and 2009 Pelagics FEP, it did not explicitly state how the SBRM meets the purpose of bycatch reporting because that requirement was not codified until 2017. However, the HDAR's CML Fish Catch Report and HMRFS surveys provide a means of collecting, recording, and recording bycatch data, and bycatch information could be summarized in the Council's annual SAFE reports.

Based on the review below, the SBRM identified for these fisheries meets the purpose by providing the means for the Council to determine the approximate amount and type of bycatch occurring in the fisheries, when combined with other sources of data. Therefore, no change is needed for the identification of the SBRM, but the FEP amendment is needed to add an

explanation of how the HDAR fish catch report and the HMRFS creel survey meets the purpose for the SBRM. The proposed amendment based on this review is described in section 3.5.

Evaluation of the SBRM under the four review factors (§600.1610(a)(2)(i)-(iv)):

1) Bycatch characteristics

In general, bycatch in the small-boat troll and pelagic handline fisheries in all the island groups is small because the gears are very selective and most captured species are desired for sale or personal consumption (WPRFMC 2002). Bycatch in the handline fisheries is comprised primarily of sharks, shark-bitten pelagics, and small pelagics (WPRFMC 2009e). The data are available from the CML reports and HMRFS, but there are currently no bycatch data summarized for the handline fisheries in the SAFE report. However, one 2019 Plan Team recommendation is to present bycatch data including species and amount for the Hawaii small-boat (i.e. handline) fishery, and efforts are ongoing to include bycatch summaries in future reports.

2) Feasibility of methodology, from cost, technical, and operational perspectives

Data are already collected through HDAR's CML reporting requirement. Thus it is feasible to acquire and analyze the data. Other data is collected through the HMRFS, which provides bycatch data as well. The costs for monitoring this bycatch would be embedded in the work of the Council's Plan Teams. The continued collection of the data is dependent upon HDAR's continued funding of the commercial reporting program, which has a long history and has been stable; the HMRFS data collection is dependent upon Sportsfish funding and MRIP and funding may not be as stable.

Reporting of target catch and bycatch alike may be improved through the use of mobile technology and electronic reporting that may render opportunities to incentivize reporting and reduce burdens of paper reporting 'after the fact.'

3) Uncertainty of data resulting from the methodology

The reporting associated with a CML has the advantage of high degrees of coverage but have the disadvantage of relying solely on fishermen to record detailed information about many species, many of which are difficult to distinguish. Like other creel surves, the HMRFS sampling, which rely on direct observations of landings and interviews with fishermen just after reaching port, yield reliable information about landings and somewhat reliable information about bycatch. The latter is limited by the memories of fishermen and the difficulties in accurately identifying fish to the species level. The precision associated with fishery-wide estimates derived from HMRFS is a function of sampling intensity.

4) How data resulting from the methodology are used to assess amount and type of bycatch occurring in the fishery

To date, the data collected from the CML reporting and HMRFS surveys have not been used to assess the amount and type of bycatch occurring in the fishery, and efforts are ongoing to include bycatch summaries in future annual SAFE reports.

If the Council identifies potential bycatch concerns based on data from the existing SBRMs, the Council may in the future recommend additional data collection efforts to improve those bycatch

estimates to inform development of appropriate bycatch mitigation measures. Council advisory bodies such as the Plan Team and Advisory Panel may also identify potential bycatch concerns based on local expert knowledge.

2.6.5 Hawaii Aku Boat Fishery

The aku (skipjack) fishery is a highly selective fishery that uses pole and line and live bait. Tuna are hooked on lines and in one motion, swung onto the boat by crew members. The fishery has been in decline since the 2009 Pelagics FEP reported 25 and 27 licensees active in 2004 and 2005. There were two HDAR CMLs in 2019. Due to confidentiality because of fewer than 3 licenses, there is no public reporting and data are pooled with "other gear" in the SAFE reports..

Does the FEP identify an SBRM?
The Council established SBRM for the Hawaii small-boat pelagic fishery, which includes the aku fishery, through the 2002 Pelagics FMP Amendment 8 (Supplement), which was carried forward in the 2009 Pelagics FEP. The 2002 Pelagics FMP Amendment 8 (Supplement) and the 2009 Pelagics FEP identify HDAR's CML Fish Catch Report and NMFS and HDAR's HMRFS as SBRMs for this fishery. HDAR's commercial reporting system was updated and the current status is documented above in Section 2.1.2 and the introduction to this section. Through the HDAR fish catch report, fishermen record and report data on the number of lost and released fish by species. Information on the implementation of HMRFS creel surveys is also found in annual SAFE reports.

Does the FEP contain an explanation of how the identified SBRM meets the purpose?
When the Council developed the 2002 Pelagics FMP Amendment 8 (Supplement) and 2009 Pelagics FEP, it did not explicitly state how the SBRM meets the purpose of bycatch reporting because that requirement was not codified until 2017.

Based on the review below, the SBRM identified for these fisheries meets the purpose by providing the means for the Council to determine the approximate amount and type of bycatch occurring in the fisheries, when combined with other sources of data. The SBRM for this fishery is included in as part of the Hawaii small-boat fishery.

Evaluation of the SBRM under the four review factors (§600.1610(a)(2)(i)-(iv)):

1) ***Bycatch characteristics***

Bycatch data are available from the CML reports and HMRFS, but there are currently no bycatch data reported for the aku fishery in the SAFE report. However, the aku boat fishery is a highly selective fishery using pole and line gear with tuna being hooked on lines and in one motion, swung onto the boat by crew members. Non-target species that are occasionally caught—such as kawakawa, blue and striped marlin, and rainbow runner—are usually either sold or retained for personal consumption by the crew (NMFS 2001).

2) ***Feasibility of methodology, from cost, technical, and operational perspectives***

Data are already collected through HDAR's CML reporting requirement. Thus it is feasible to acquire and analyze the data. Other data is collected through the HMRFS, which provides bycatch data as well. The continued collection of the data is dependent upon HDAR's continued funding of the commercial reporting program, which has a long history and has been stable; the

HMRFS data collection is dependent upon Sportsfish funding and MRIP and funding may not be as stable. The costs for monitoring and reporting this bycatch would be embedded in the work of the Council's Plan Teams.

3) Uncertainty of data resulting from the methodology

The reporting associated with a CML has the advantage of high degrees of coverage but have the disadvantage of relying solely on fishermen to record detailed information about many species, many of which are difficult to distinguish. The HMRFS sampling, which rely on direct observations of landings and interviews with fishermen just after reaching port, yield reliable information about landings and somewhat reliable information about bycatch. The latter is limited by the memories of fishermen and the difficulties in accurately identifying fish to the species level. The precision associated with fishery-wide estimates derived from HMRFS is a function of sampling intensity.

4) How data resulting from the methodology are used to assess amount and type of bycatch occurring in the fishery

To date, the data collected from the CML reporting and HMRFS surveys are not used to assess the amount and type of bycatch occurring in the fishery.

If the Council identifies potential bycatch concerns based on data from the existing SBRMs, the Council may in the future recommend additional data collection efforts to improve those bycatch estimates to inform development of appropriate bycatch mitigation measures. Council advisory bodies such as the Plan Team and Advisory Panel may also identify potential bycatch concerns based on local expert knowledge.

2.6.6 Squid Jig Fishery

The large scale international squid jigging fishery was conducted by a single operation using four catcher vessels and one large mothership (WPRFMC 2009e). They operated under the HSFCA permit. A detailed description of the fishery was contained in Amendment 15 to the Pelagics FMP, which established the Western Pacific squid jig fishing permit.

A US vessel must be registered for use under a Western Pacific squid jig fishing permit if the vessel is more than 50 feet long and used to squid jig fish in EEZ waters around American Samoa, CNMI, Guam, Hawaii or the PRIA.

Does the FEP identify an SBRM?

The 2009 Pelagics FEP identifies the NMFS High Seas Fishing Compliance Act (HSFCA) logbook, NMFS squid jig logbook, and HDAR Fish Catch Report (if landed in Hawaii) as SBRMs for this fishery. It also identifies observer coverage as SBRM for the squid jig fishery.

Does the FEP contain an explanation of how the identified SBRM meets the purpose?

There is no explanation of how the two logbooks and the HDAR fish catch report meet the purpose of SBRM because the FEP was published before the SBRM requirements were published. However, based on the review below, the SBRM identified for these fisheries meets

the purpose by providing the means for the Council to determine the approximate amount and type of bycatch occurring in the fisheries, when combined with other sources of data.

Evaluation of the SBRM under the four review factors (§600.1610(a)(2)(i)-(iv)):

1) Bycatch characteristics

There is currently no active fishery. However, the squid jig fishery has very low bycatch and is highly selective. The most common bycatch in the high seas fishery is small numbers of blue shark, which typically break the line before the shark is pulled onboard. Logbooks from 2001-2003 contained bycatch reporting for only 2001 and included small numbers of squid that fell off the line and blue sharks (WPFMC 2008).

2) Feasibility of methodology, from cost, technical, and operational perspectives

Data are collected for the squid fishery through federal logbook reporting requirements or through HDAR CML reporting if landed in Hawaii. This is an ongoing program that is feasible with respect to the three perspectives.

3) Uncertainty of data resulting from the methodology

The reporting associated with a CML has the advantage of high degrees of coverage but have the disadvantage of relying solely on fishermen to record detailed information about many species, many of which are difficult to distinguish.

4) How data resulting from the methodology are used to assess amount and type of bycatch occurring in the fishery

To date, the data collected from the CML reporting is not used to assess the amount and type of bycatch occurring in the fishery. However, there has been no active squid jig fishery since the implementation of Pelagic FMP Amendment 15.

2.7 ECOSYSTEM COMPONENT SPECIES

The Council reclassified a large number of its MUS as ECS in 2019 through Amendment 4 to the American Samoa FEP, Amendment 5 to both the Mariana and Hawaii FEPs to focus monitoring, assessment and management efforts on species that are in need of conservation and management, and improve efficiency of fishery management in the region (February 8, 2019, 84 FR 2767). The reclassification was based on the criteria described in the National Standard 1 guidelines, particularly whether a stock is caught by or a target of the fishery, if the stock is important to commercial, recreational, or subsistence users, and if it is an important part of the marine ecosystem.

The following are fisheries that were reclassified as ECS:

- American Samoa FEP
    - Crustaceans
    - Precious corals
    - Coral Reef species
- Marianas FEP
    - Crustaceans
    - Precious corals

    - Coral reef species
- Hawaii FEP
    - Some crustaceans (Lobsters)
    - Some precious corals
    - Coral reef species

Some BMUS in each FEP were also reclassified as ECS. The Council and NMFS, in cooperation with the State of Hawaii, Territories of American Samoa, Guam and CNMI continue to monitor fisheries that catch ECS. If an ECS stock becomes a target of a Federal fishery in the future, NMFS and the Council will evaluate including that stock in the management unit to be actively managed. Federal permitting and reporting for fishing in federal waters were retained.

The Council previously identified the federal logbooks and the territory and state primary fishery data collection system (e.g., commercial catch reports and/or creel surveys) as SBRMs for these fisheries through its 1998 and 2002 bycatch amendments and the 2009 Fishery Ecosystem Plans (FEPs). Due to their reclassification as ECS fisheries, identification of SBRM for these fisheries may be removed from the FEPs.

The ECS fisheries occur primarily in territorial/state waters (0-3 miles) with little to no existing effort in federal waters, primarily use selective gear with little to no known bycatch, , and/or retain nearly all fishes caught (see additional details below). Due to these characteristics, the Council has not identified a need for conservation and management measures to reduce bycatch in these fisheries.

Removal of SBRM from these ECS would mean that the FEPs would no longer explicitly identify SBRMs for these fisheries, and would exclude these fisheries from the periodic review of SBRMs in the future. However, existing permitting, reporting and monitoring mechanisms would remain in place, allowing the Council to monitor catch, effort, and gear types used to determine whether conservation and management needs arise in the future that would necessitate reclassifying ECS to MUS, such as increase in effort or new gear types being used. The Council may also utilize other methods of data collection, such as cooperative research, to evaluate any changes to bycatch potential that may necessitate improvements to existing data collection methodologies for assessing the amount and type of bycatch. Council advisory bodies such as the Plan Team and Advisory Panel may also identify potential bycatch concerns based on local expert knowledge. Therefore, explicit identification of SBRM in the FEPs is not necessary for ECS to allow the Council to detect any future bycatch concerns in ECS fisheries.

2.7.1 American Samoa Crustacean Fishery

All crustaceans are managed as ecosystem component species (ECS) under the American Samoa FEP. Lobster fishing by hand harvest occurs primarily in territorial waters (0-3 miles), and there is no known bycatch associated with this fishery. Lobster species targeted in American Samoa do not readily enter traps, and thus lobster fishing using trap gear does not occur in American Samoa (WPRFMC 2009a). No fishing for deepwater shrimp has been reported around American Samoa.

Data collection methods available
Data regarding crustacean catch is captured in creel surveys for harvest in territory waters as described in Section 2.1.1, and in federal logbooks for harvest of lobsters and deepwater shrimp in the US EEZ around American Samoa.

Federal crustacean permit holders are required to complete a logbook, which captures data on catch and effort, including the number of traps set, hauled, and lost; depth traps were set; and the time when traps were set and hauled. . The logbook requires permittees to distinguish between the number kept and number discarded by species, and whether they were berried (had eggs) or not. There is also an "other" category for non-crustacean species that may be caught (both kept and discarded) that the permittee may specify. Other information required in the logbook include weather conditions, location fished, and protected species observations. Permit holders may be required to carry an observer on the vessel when requested by the Regional Administrator.

Since the crustacean MUS has been designated as ECS, they are no longer monitored at the same level as an MUS in American Samoa. The American Samoa Plan Team members provided a list of 10 ecosystem component species they would like to monitor, which includes *Panulirus penicillatus* (green lobster). Catch of these species will continue to be summarized in the SAFE report.

2.7.2 American Samoa Precious Coral Fishery

All precious corals are managed as ECS under the American Samoa FEP. There are currently no known precious coral beds or precious coral fisheries in waters around American Samoa. There has been no record of a precious coral fishery taking place in American Samoa in the past 40 years, therefore there is no bycatch associated with this fishery. The American Samoa FEP regulations only allow harvest of precious coral by selective gear (i.e., with submersibles or by hand). Federal precious coral fisheries in Hawaii have no bycatch. Therefore, no bycatch is expected from this fishery, should one develop in American Samoa (WPRFMC 2009a). If a fishery were to develop in the future, provisions in the American Samoa FEP would allow harvest only by selective gear (i.e., with submersibles or by hand). The fishery would be subject to the existing annual harvest quota 1,000 kg of all species combined (except black corals) which applies to the Federal waters around American Samoa. The fishery is also subject to a moratorium on fishing for, taking, or retaining any gold coral in any precious coral permit area, and renewed on a five year cycle. This moratorium includes all waters of the U.S. Exclusive Economic Zone of the Western Pacific Region and is in effect through June 30, 2023 (83 FR 27716).

Data collection methods available
The Council established SBRM for precious coral fisheries through the 1998 Precious Coral FMP Amendment 4 (WPRFMC 1998), which was carried forward in the 2009 American Samoa Archipelago FEP (WPRFMC 2009a). The 1998 Precious Coral FMP Amendment 4 and the 2009 American Samoa Archipelago FEP identify the federal logbook as the SBRM for this fishery.

A Federal Western Pacific Precious Corals permit is required to harvest precious coral ECS in Federal waters around American Samoa and permit holders are required to maintain Federal logbooks of their catch and effort. Permit holders must submit a logbook to NMFS within 72

hours of landing which includes information on landings, as well as a sales receipt with the number of trees sold, weight, revenue, and date of sale. The form does not require harvesters to report how they dispose of harvested coral or the type, amount and disposition of other organisms that may be harvested.

2.7.3 American Samoa Coral Reef Ecosystem Fishery

All species in the coral reef ecosystem fishery under the American Samoa FEP are managed as ECS. This fishery occurs primarily in territorial waters (0-3 miles), and there is no known bycatch associated with this fishery. The coral reef fishery is the most diverse, in terms of fishing method and species harvested, of all the fisheries monitored in American Samoa. The fishery ranges from the shore for finfish and invertebrates to the offshore banks for deepwater finfish. Almost all coral reef fishes caught in American Samoa are considered food fishes and are kept, regardless of size or species (WPRMFC 2009a). The dominant method used in the boat-based coral reef fishery is spear fishing, which is a selective gear targeting mostly surgeon fish and snappers. The dominant shore-based coral reef fishing method is gleaning, which targets mostly octopus and trochus shells and is a very selective method.

Data collection methods available

The 2009 American Samoa Archipelago FEP (WPRFMC 2009a) identifies SBRM for the coral reef ecosystem fishery as the American Samoa DMWR boat-based and shore-based creel surveys, and the federal logbook required for federal permit holders. The creel survey has been continuously implemented since 1985. The survey is conducted year-round, and covers fishing by persons engaged in subsistence, recreational, charter, and commercial fishing (WPRFMC 2009a). Detailed survey methodology is described in section 2.1.1.

Fishermen are required to apply for a federal Special Coral Reef Ecosystem Fishing Permit when fishing for coral reef fishes or invertebrates in designated low-use marine protected areas or for those species listed as ECS in the EEZ around American Samoa, and are required to complete a federal logbook that includes reporting of discards. The logbook also includes information on catch (species, number caught, pounds caught, number kept, pounds kept, reason for discard, and how it was processed), effort (gear type, time of set and haul, number of gears, gear loss), weather (wind speed, direction, average depth, sea surface temperature) and protected species interactions (numbers of turtles, and other species that were observed in the area or vicinity of gear, interfering with fishing, preying on catch, and entangled and released alive or dead).

In addition, if coral reef fish are being transshipped, a transshipment permit and logbook are also required and must be provided to NMSF within seven days of arriving at port. The transshipment logbook requires days fished, gear used, average units of gears set per day, area fished, receiving vessel information, and transshipment information (species, number received, total weight received).

2.7.4 Marianas Crustacean Fishery

All crustaceans in the Mariana Archipelago FEP are managed as ECS. Lobster fishing by hand occurs primarily in territorial waters (0-3 miles), primarily targeting spiny lobster, and there is no known bycatch associated with this fishery.

There are currently no known operations of deep-water shrimp fishery in the CNMI and Guam, and as of 2020, there are no permits issued. Based on data from deep-water shrimping undertaken in the CNMI in the 1990s, bycatch in this fishery include a small number of deepwater eels (*Synaphobranchus* spp.) and dogfish sharks (Ostazeski 1997). A large number of two species of Geryonid crabs were also caught, although these species are marketable incidental catch.

Data collection methods available

The Council established SBRM for the crustacean fisheries through the 1998 Crustacean FMP Amendment 10 (WPRFMC 1998), which was carried forward in the 2009 Mariana Archipelago FEP (WPRFMC 2009b). The 1998 Crustacean FMP Amendment 10 and the 2009 Mariana Archipelago FEP identify the Guam DAWR creel surveys and CNMI DMWR creel surveys as SBRM for this fishery. A description of the creel survey can be found in Section 2.1.1.

The federal logbook is also identified as SBRM for harvest of crustacean ECS in federal waters around Guam and CNMI. Federal crustaceans permit and logbook reporting is required when fishing for lobsters or deepwater shrimp in the U.S. EEZ waters around Guam and CNMI. Fishery participants can use NMFS approved electronic logbooks or paper logbooks.

The federal logbook captures data on catch and effort, including the number of traps set, hauled, and lost; depth traps were set; and the time when traps were set and hauled. The logbook requires permittees to distinguish between the number kept and number discarded by species, and whether they were berried (had eggs) or not. There is also an "other" category for non-crustacean species that may be caught (both kept and discarded) that the permittee may specify.

In 2019, no federal permits have been issued for crustacean fisheries in Guam and CNMI, and thus no bycatch reported in federal waters.

2.7.5 Mariana Precious Coral Fishery

All precious corals in the Mariana Archipelago FEP are managed as ECS. There are no existing fisheries for precious corals in Guam or CNMI.

If a fishery were to develop in the future, provisions in the Mariana Archipelago FEP would allow harvest only by selective gear (i.e., with submersibles or by hand). The fishery would be subject to the existing annual harvest quota 1,000 kg of all species combined (except black corals) which applies to the Federal waters around Guam and CNMI. The fishery is also subject to a moratorium on fishing for, taking, or retaining any gold coral in any precious coral permit area, and renewed on a five year cycle.. This moratorium includes all waters of the U.S. Exclusive Economic Zone of the Western Pacific Region and is in effect through June 30, 2023 (83 FR 27716).

Data collection methods available

The Council established SBRM for precious coral fisheries through the 1998 Precious Coral FMP Amendment 4 (WPRFMC 1998), which was carried forward in the 2009 Mariana Archipelago FEP (WPRFMC 2009a). Both identify the federal logbook as the SBRM for this fishery. Creel surveys in Guam and CNMI are also identified as SBRM for this fishery. Details regarding creel survey methodology can be found in Section 2.1.1.

A Federal Western Pacific Precious Corals permit is required to harvest precious coral ECS in Federal waters around Mariana Archipelago and permit holders are required to maintain Federal logbooks of their catch and effort. Permit holders must submit a logbook that includes data on landings, as well as a sales receipt with the number of trees sold, weight, revenue, and date of sale. The form does not require harvesters to report how they dispose of harvested coral or the type, amount and disposition of other organisms that may be harvested.

The precious coral fishery is a boat-based operation therefore data may also be captured through boat-based creel survey, which is the primary data collection tool for fisheries in Guam and CNMI.

Should a precious coral fishery develop in Guam or CNMI, the federal permit and logbook requirements are expected to capture the development of the fishery and any associated effort. Due to the selective gear requirement for precious coral fisheries, bycatch is not expected to be a management concern should a fishery develop. The Council may utilize other methods of data collection, such as cooperative research, to evaluate any changes to bycatch potential that may necessitate improvements to existing data collection methodologies for assessing the amount and type of bycatch.

2.7.6 Marianas Coral Reef Ecosystem Fishery

All species in the coral reef ecosystem fishery in the Mariana Archipelago FEP are managed as ECS. This fishery occurs primarily in territorial waters (0-3 miles), and there is no known bycatch associated with this fishery. Creel surveys in Guam and CNMI are the primary data capture tools and are described in Section 2.1.1. The federal logbook is also identified as SBRM for federal permit holders.

Small-scale nearshore fisheries in Guam and CNMI are of fundamental importance for subsistence, social and cultural purposes, in addition to providing food, trade, and recreational resources. The coral reef fishery is an important resource for families in Guam and CNMI. Not only is it a source of food but also an alternate source of income and majority of fishermen sell part of their catch and keep the rest for consumption. Most coral reef fishing occurs in near-shore areas. Finfish and invertebrates are the primary targets and small quantities of seaweed are also harvested. Cast-netting, spear-fishing, hook and line, gleaning, trolling, and bottom fishing are common fishing techniques practiced in the Mariana Archipelago.

Almost all coral reef fishes caught in the Mariana Archipelago are considered food fishes and are kept, regardless of size or species. Discards, if they occur, are usually due to cultural reasons (i.e., taboo) or practical reasons such as toxicity (e.g., ciguatera and poison).

Data collection methods available

A federal Special Coral Reef Ecosystem Fishing Permit is required when fishing for coral reef fishes or invertebrates in designated low-use marine protected areas or ECS in the EEZ around Guam and CNMI. The permit is also required for those fishing gears that are not specifically allowed in the regulations that target these species. Permit holders are required to complete a federal logbook. The logbook includes information on catch (species, number caught, pounds caught, number kept, pounds kept, reason for discard, and how it was processed) and effort (gear

type, time of set and haul, number of gears, gear loss), as well as weather and protected species interactions.

Since the coral reef fish MUS has been designated as ECS, they are no longer monitored at the same level as an MUS. The Guam and CNMI Plan Team members provided a list of 10 ECS that they would like to monitor, which includes some coral reef fish species. Catch of these species will continue to be summarized in the SAFE report.

2.7.7 Hawaii Coral Reef Ecosystem Fishery

All species in the coral reef fishery are classified as ECS, thus there are no SBRM reporting requirements. However, all existing management measures, including reporting and record keeping, apply to the ECS. The following ten species were selected by HDAR to continue monitoring: opihi (*Cellana* spp.; limpet), lobster (*Panulirus* spp.), kumu (*Parupeneus porphyreus*; whitesaddle goatfish), omilu (*Caranx melampygus;* bluefin trevally), uhu (family Scaridae; parrotfish), he'e (*Octopus cyanea*; day tako), kala (*Naso* spp.), nenue (*Kyphosus* spp.; brown chub), Manini (*Acanthurus triostegus*; convict tang), and taape (*Lutjanus kasmira*; bluestripe snapper).

Data collection methods available

There are three ways in which data is collected for coral reef fisheries. The Hawaii Marine Recreational Fishers Survey (HMRFS) collects data through creel surveys around the state from recreational and subsistence fishers. Data is collected from commercial fishers via the data collection described in Section 2.1.2. And, HDAR also collects data via in-water fisheries independent surveys to collect abundance data. Data collection and use methodology is described in the Hawaii SAFE Report.

Despite HDAR collecting information on discards, Hawaii SAFE reports through 2019 did not include bycatch numbers. The 2020 SAFE report did report bycatch information for the first time (WPRFMC 2021b), so the Council has information to analyze bycatch and determine if a need for additional management arises.

2.7.8 Hawaii Precious Coral Fishery

Five precious corals in the Hawaii precious coral fisheries are ECS: *Corallium sp*., *Lepidisis olapa*, *Callogorgia gilberti*, *Calyptrophora sp*., and *Narella sp*. If a fishery were to develop in the future, provisions in the Hawaii Archipelago FEP would allow harvest only by selective gear (i.e., with submersibles or by hand). Anyone harvesting precious corals is required to have a permit and can only harvest from designated management areas. The permit holder must complete a federal logbook if harvest is occurring in an exploratory area, which contains data on catch, effort, and other data. HDAR requires a commercial marine license and commercial fishing report for the harvest of precious corals.

Data collection methods available

HDAR's current data collection includes number of discards, but due to the harvesting method, this fishery is unlikely to have bycatch. NMFS permits and logbooks do not include bycatch because of this as well.

Should a precious coral fishery develop in Hawaii, the federal permit and logbook requirements are expected to capture the development of the fishery and any associated effort. Due to the selective gear requirement for precious coral fisheries, bycatch is not expected to be a management concern should a fishery develop. The Council may utilize other methods of data collection, such as cooperative research, to evaluate any changes to bycatch potential that may necessitate improvements to existing data collection methodologies for assessing the amount and type of bycatch.

3 DESCRIPTION OF THE PROPOSED ACTION

The proposed action under consideration for Council final action would amend the FEPs for the American Samoa Archipelago, the Mariana Archipelago, Hawaii Archipelago, PRIA, and Pelagics to update the SBRMs and associated descriptions in the FEP for consistency with the 2017 Final Rule. The following sections provide the proposed amendments for each fishery under the five FEPs.

3.1 American Samoa Archipelago FEP

This action would amend the American Samoa Archipelago FEP as follows:

1. Update the SBRM table (Table 1) to:
    a. Remove fisheries that target ECS species, and create a separate data collection methods for those fisheries (Table 2).
2. Add an explanation of how the SBRM meets the purpose, including language to address potential adjustments to the identified SBRMs. The draft explanation is as follows:

    The primary territorial fishery data collection methodologies constitute the SBRM for the American Samoa bottomfish fisheries. SBRM for this fishery is comprised of the offshore creel survey (also known as the boat-based creel survey), and the inshore creel survey (also known as the shore-based creel survey). Creel surveys collect information on discards and other bycatch and are described in more detail in section X [of the FEP] and in annual SAFE reports. There are no federal logbook programs for this fishery. These data are collected and initially recorded by American Samoa DMWR, which then reports the data to NMFS PIFSC for permanent storage. Available data from the creel surveys are summarized in the annual SAFE reports.

    The SBRMs identified for the American Samoa bottomfish fishery meet the purpose by providing the means for the Council to determine the approximate amount and type of bycatch occurring in the fishery, when combined with other sources of data. The data collection methodologies described are appropriate SBRM for this fishery based on the fishery characteristics and known bycatch characteristics. If changes are needed for any of the SBRM programs, the Council, PIRO, PIFSC and the SSC would consult to ensure that data collection systems continue to provide robust and representative data to support science and management needs.

    Fisheries that target ECS species have similar data collection methodologies in place, but these are not identified as SBRM.

Table 1: Updated SBRM for American Samoa Archipelago Fisheries

	Observer Programs	NMFS Federal Logbook Programs (EEZ waters)	Creel Surveys (all waters)
Bottomfish	Could supplement SBRM if implemented[1]	N/A	DMWR Boat-based, Shore-based Creel Surveys

[1] Not identified as SBRM, however observers could be required by regulation (§ 665.105), and observer data could be used to supplement creel survey data.

Table 2: Data collection methods for American Samoa ECS

	Observer Programs	NMFS Federal Logbook Programs (EEZ waters)	Creel Surveys (all waters)
Coral Reef Ecosystem species	None	Federal logbook required for all PHCRT catch and effort	Am. Samoa DMWR Boat-based, Shore-based Creel Surveys
Precious Corals	None	Federal logbook required for all catch and effort	None
Crustaceans	None	Federal logbook required for all lobster catch and effort	Am. Samoa DMWR Boat-based, Shore-based Creel Surveys

3.2 Mariana Archipelago FEP

This action would amend the Mariana Archipelago FEP as follows:

1. Update the SBRM table (**Table 3**) to:
    a. Add shore-based creel survey to the CNMI bottomfish SBRM
    b. Remove fisheries that target ECS species, and create a separate data collection methods for fisheries that target ECS species (**Table 4**).
2. Add an explanation of how the SBRM meets the purpose, including language to address potential adjustments to the identified SBRMs. The draft explanation is as follows:

    The primary federal and territorial fishery data collection methodologies constitute the SBRM for the Guam and CNMI bottomfish fisheries. For the Guam bottomfish fisheries, SBRM is comprised of a federal logbook required for vessels larger than 50 feet, the offshore creel survey (also known as the boat-based creel survey), and the inshore creel survey (also known as the shore-based creel survey). For the CNMI bottomfish fishery, the SBRM is comprised of a federal logbook for persons permitted to fish commercially for bottomfish in federal waters around the CNMI, the offshore creel survey (also known as the boat-based creel survey), and the inshore creel survey (also known as the shore-based creel survey). Creel surveys collect information on discards and other bycatch and are described in more detail in section X [of the FEP] and in annual SAFE reports. Federal logbook data are recorded by fishermen and reported to NMFS. Guam DAWR and CNMI DFW collect and record creel survey data on commercial and non-commercial fishing. These data are collected and initially recorded by Guam DAWR and CNMI DFW. DAWR and DFW then report the data to NMFS PIFSC for permanent

storage. Available data from logbooks and creel surveys are summarized in the annual SAFE reports.

The SBRMs identified for the Guam and CNMI bottomfish fisheries meet the purpose by providing the means for the Council to determine the approximate amount and type of bycatch occurring in the fishery, when combined with other sources of data. The data collection methodologies described are appropriate SBRM for this fishery based on the fishery characteristics and known bycatch characteristics. If changes are needed for any of the SBRM programs, the Council, PIRO, PIFSC and the SSC would consult to ensure that data collection systems continue to provide robust and representative data to support science and management needs.

Fisheries that target ECS species have similar data collection methodologies in place, but these are not identified as SBRM.

Table 3: Updated SBRM for Mariana Archipelago Fisheries

	Observer Programs	NMFS Federal Logbook Programs (EEZ waters)	Creel Surveys (all waters)
Guam Bottomfish	Could supplement SBRM if implemented[1]	Federal logbook required for catch and effort from vessels > 50 ft.	DAWR: Guam Offshore Creel Census, Inshore Creel Survey
CNMI Bottomfish	Could supplement SBRM if implemented[1]	Federal logbook required for all catch and effort from commercial vessels	DFW: CNMI Offshore Creel Survey, Shore-based Creel Survey

[1] Not identified as SBRM, however observers could be required by regulation (§ 665.407), and observer data could be used to supplement creel survey data.

Table 4: Data collection methods for Mariana Archipelago ECS

	Observer Programs	NMFS Federal Logbook Programs (EEZ waters)	Creel Surveys (all waters)
Coral Reef Ecosystem species	None	Federal logbook required for all catch and effort 3-200 miles from shore	DAWR: Guam Offshore Creel Census, Inshore Creel Survey DFW: CNMI Offshore Creel Survey, Inshore Creel Census
Precious Corals	None	Federal logbook required for all catch and effort	DAWR: Guam Offshore Creel Census, Inshore Creel Survey DFW: CNMI Offshore Creel Survey, Inshore Creel Census
Crustaceans	None	Federal logbook required for all lobster and deepwater shrimp catch and effort	DAWR: Guam Offshore Creel Census, Inshore Creel Survey DFW: CNMI Offshore Creel Survey, Inshore Creel Census

3.3 Hawaii Archipelago FEP

This action would amend the Hawaii Archipelago FEP as follows:

1. Update the SBRM table (**Table 5**) to:
    a. Remove fisheries that target ECS species, and create a separate data collection methods for fisheries that target ECS species (**Table 6**).
2. Add an explanation of how the SBRM meets the purpose, including language to address potential adjustments to the identified SBRMs. The draft explanation is as follows:

    The primary state and federal fishery data collection methodologies constitute the SBRM for the MHI and NWHI bottomfish fisheries, crustacean fishery, and precious coral fishery. SBRM for the MHI bottomfish fishery is comprised of the HDAR fish catch report (commercial), HMRFS (non-commercial), and the federal logbook for MHI non-commercial bottomfish permittees. SBRM for the NWHI bottomfish fishery is comprised of the HDAR NWHI bottomfish trip daily log, and the federal observer program, when active. SBRM for the crustacean fishery is comprised of the HDAR fish catch report (commercial), federal logbook for deepwater shrimp, and HMRFS (if crustacean data are collected in the future). SBRM for the precious coral fishery is comprised of the HDAR fish catch report and the federal logbook.

    Fishermen who hold a commercial marine license are required to record catch and effort data and report them through the HDAR fish catch reports. HDAR collects non-commercial fishing data through the HMRFS, which consists of mail surveys and collection of catch data through a creel survey done by HDAR staff at public fishing areas around the State. Creel surveys and commercial catch reports collect information on discards and other bycatch and are described in more detail in section X [of the FEP] and in annual SAFE reports. Where required, fishermen record and report catch and effort data through federal logbooks. When active, federal observers record and report catch and effort data. Available bycatch data from these data collection methodologies are summarized in the annual SAFE reports.

    The SBRMs identified for the MHI and NWHI bottomfish fisheries, crustacean fishery, and precious coral fishery meet the purpose by providing the means for the Council to determine the approximate amount and type of bycatch occurring in the fishery, when combined with other sources of data. These data collection methodologies described are appropriate SBRM for this fishery based on the fishery characteristics and known bycatch characteristics. If changes are needed for any of the SBRM programs, the Council, PIRO, PIFSC and the SSC would consult to ensure that data collection systems continue to provide robust and representative data to support science and management needs.

    Fisheries that target ECS species have similar data collection methodologies in place, but these are not identified as SBRM.

Table 5: Updated SBRM for Hawaii Archipelago Fisheries

	Observer programs	NMFS Federal Logbook programs (EEZ waters)	HDAR State Logbook Programs (All waters)	Creel surveys (All waters)
MHI Bottomfish	Could supplement SBRM if implemented[1]	Federal logbook required for MHI non-commercial bottomfish permittees	Fish Catch Report (commercial only)	HI Marine Recreational Fishing Survey
NWHI Bottomfish[2]	NMFS: 1981-1982, 2003 - 2005 HDAR: 1990-1993 All fishing vessels must carry an observer when directed to do so by the NMFS Regional Administrator.	HDAR NWHI Bottomfish Trip Daily Log meets Federal requirement	NWHI Bottomfish Trip Daily Log	N/A
Crustaceans (MUS)	Could supplement SBRM if implemented[1]	Required for deepwater shrimp catch and effort	Fish Catch Report (commercial only)	HI Marine Recreational Fishing Survey[3]
Precious Corals (MUS)	None	Required for all catch and effort	Fish Catch Report (commercial only)	None

[1] Not identified as SBRM, however observers could be required by regulation (§ 665.207 (bottomfish); §665.247 (crustaceans)), and observer data could be used to supplement the other data sources.
[2] NMFS closed the NWHI fishery in 2009 in accordance with provisions of Presidential Proclamation 8031, establishing the Papahānaumokuākea Marine National Monument and prohibiting commercial fishing (71 FR 51134, August 29, 2006).
[3] HMRFS does not currently collect data on crustaceans, but this data collection method is retained as an SBRM in the event that crustacean data are included in the future.

Table 6: Data Collection Methods for Hawaii Archipelago ECS

	Observer programs	NMFS Federal Logbook programs (EEZ waters)	HDAR State Logbook Programs (All waters)	Creel surveys (All waters)
Coral Reef Ecosystem species	None	Required for all PHCRT catch and effort	Fish Catch Report (commercial only)	HI Marine Recreational Fishing Survey
Precious Corals (ECS)	None	Required for all catch and effort	Fish Catch Report (commercial only)	None

3.4 PRIA FEP

This action would amend the PRIA FEP as follows:

1. No changes will be made to the SBRM table (**Table 7**)
2. Add an explanation of how the SBRM meets the purpose, including language to address potential adjustments to the identified SBRMs. The draft explanation is as follows:

   The federal logbooks constitute the SBRM for PRIA bottomfish, coral reef ecosystem, precious coral, and crustacean fisheries. There are currently no active federal fisheries operating in the PRIA due to a prohibition on commercial fishing by the PRIMNM and the remoteness of the islands for non-commercial fishing. Should fishing occur, fishermen would be required to obtain a permit and report data through a federal logbook, and any available data would be summarized in the annual SAFE reports.

   The logbooks identified as SBRM for the PRIA fisheries collect information on discards and other bycatch, and meet the purpose by providing the means for the Council to determine the approximate amount and type of bycatch occurring in the fishery, when combined with other sources of data. The data collection methodologies described are appropriate SBRM for this fishery based on the fishery characteristics and known bycatch characteristics. If changes are needed for any of the SBRM programs, the Council, PIRO, PIFSC and the SSC would consult to ensure that data collection systems continue to provide robust and representative data to support science and management needs.

Table 7: SBRM for PRIA Fisheries (no changes proposed)

	Observer programs	**NMFS Federal Logbook Programs (EEZ waters)**	**Creel Surveys (all waters)**
Bottomfish	Could supplement SBRM if implemented[1]	Federal logbook required for all catch and effort	N/A
Coral Reef Ecosystem species	None[2]	Federal logbook required for all PHCRT catch and effort Federal logbook required for all CHCRT catch and effort in low-use MPAs (Johnston, Wake, Palmyra)	N/A
Precious Corals	None[2]	Federal logbook required for all catch and effort	N/A
Crustaceans	Could supplement SBRM if implemented[1]	Federal logbook required for all catch and effort	N/A

[1] Not identified as SBRM, however observers could be required by regulation (§ 665.606 (bottomfish); 665.645 (crustaceans)), and observer data could be used to supplement federal logbook data.
[2] Not identified as SBRM, however pursuant to the Endangered Species Act, NMFS may require fishing vessels in fisheries identified through an annual determination process to carry Federal observers, and observer data could be used to supplement federal logbook data (72 FR 43176, August 3, 2007).

3.5 Pelagic FEP

This action would amend the Pelagic FEP as follows:

1. Update the SBRM table (Table 8) to:
    a. Remove creel survey from the SBRM for the American Samoa longline fishery
    b. Identify the Western Pacific longline fishing logbook as SBRM for the Western Pacific general longline fishery
    c. Remove U.S. Albacore and Purse Seine fisheries from the SBRM table
2. Add an explanation of how the SBRM meets the purpose, including language to address potential adjustments to the identified SBRMs. The draft explanation is as follows:

    The primary state, territorial, and federal fishery data collection methodologies constitute the SBRMs for the longline, small-boats, and squid jig fisheries.

    SBRM for the Hawaii and American Samoa longline fisheries is comprised of the Western Pacific daily longline fishing log and the federal observer program. SBRM for the Western Pacific general longline fishery is comprised of the Western Pacific daily longline fishing log. Longline permit holders are required to record and report catch and effort data to NMFS. NMFS also collects catch, bycatch and protected species interaction data through a federal observer program for the Hawaii and American Samoa longline fisheries. Available bycatch data from these data collection methodologies are summarized and reported in the annual SAFE reports.

    SBRM for the Hawaii small-boat troll and handline fishery is comprised of the HDAR fish catch report (commercial) and HMRFS (non-commercial). Fishermen who hold a commercial marine license are required to record catch and effort data and report them through the HDAR fish catch reports. HDAR collects non-commercial fishing data through the HMRFS, which consists of mail surveys and collection of catch data by HDAR staff at public fishing areas around the State. Available bycatch data from these data collection methodologies are summarized in the annual SAFE reports.

    SBRM for the American Samoa, Guam, and CNMI small-boat fisheries is comprised of the offshore creel surveys (also known as the boat-based creel surveys) for each of the respective areas. These data are collected and initially recorded by the American Samoa DMWR, Guam DAWR, and CNMI DFW, which then report the data to NMFS PIFSC for permanent storage. Available data from the creel surveys are summarized in the annual SAFE reports.

    SBRM for the PRIA small-boat fishery is comprised of federal logbooks, HDAR fish catch reports (commercial only if landed in Hawaii), HMRFS (non-commercial if landed in Hawaii), and the USFWS Midway Sports Fishing Boat Trip log. There are currently no active federal fisheries operating in the PRIA due to a prohibition on commercial fishing by the PRIMNM and the remoteness of the islands for non-commercial fishing. Should fishing occur, fishermen who hold federal permits would be required to report and record catch and effort data through federal logbooks, and fishermen who hold a Hawaii commercial marine license are required to record catch and effort data and report them through the HDAR fish catch reports. HDAR collects non-commercial fishing data

through the HMRFS, which consists of mail surveys and collection of catch data by HDAR staff at public fishing areas around the State. Available data would be summarized in the annual SAFE reports.

SBRM for the squid jig fishery is comprised of the NMFS High Seas Fishing Compliance Act (HSFCA) logbook, NMFS squid jig logbook, and HDAR Fish Catch Report (if landed in Hawaii). There is currently no active fishery. Should fishing occur, fishermen would be required to record catch and effort data using federal logbooks and report it to NMFS. Fishermen who hold a Hawaii commercial marine license would be required to record catch and effort data and report them through the HDAR fish catch reports. Any available bycatch data from these data collection methodologies would be summarized in the annual SAFE reports.

The SBRMs identified for the pelagic fisheries meet the purpose by providing the means for the Council to determine the approximate amount and type of bycatch occurring in the fishery, when combined with other sources of data. These data collection methodologies described are appropriate SBRM for this fishery based on the fishery characteristics and known bycatch characteristics. If changes are needed for any of the SBRM programs, the Council, PIRO, PIFSC and the SSC would consult to ensure that data collection systems continue to provide robust and representative data to support science and management needs.

Table 8: Updated SBRM for Pacific Pelagic Fisheries

	Observer programs[4]	**Logbook programs**	**Creel surveys**
Hawaii-based Longline	NMFS: 1994-present	NMFS W. Pacific Daily Longline Fishing Log	N/A
America Samoa-based Longline	NMFS: 2006-present	NMFS W. Pacific Daily Longline Fishing Log	N/A
Western Pacific General Longline	Could supplement SBRM if implemented[1]	NMFS W. Pacific Daily Longline Fishing Log	N/A
Hawaii-based Small Boats	None[2]	HDAR Fish Catch Report (commercial only)	HI Marine Recreational Fishing Survey
American Samoa-based Small Boats	None[2]	N/A	DMWR Offshore Survey
CNMI-based Small Boats	None[2]	N/A	DFW Offshore Survey

[4] Pursuant to the Endangered Species Act NMFS may require fishing vessels in fisheries identified through an annual determination process to carry Federal observers (72 FR 43176, August 3, 2007).

Guam-based Small Boats	None[2]	N/A	DAWR Offshore Survey
PRIA Small Boats	None[2]	NMFS PRIA Troll/Handline Logbook, HDAR Fish Catch Report (commercial only, if landed in Hawaii); USFWS Midway Sports Fishing Boat Trip Log (if based on Midway)	HI Marine Recreational Fishing Survey (if landed in Hawaii)
U.S. Squid Jig Boats	NMFS : 2008-present	NMFS HFSCA logbook NMFS Squid Jig logbook HDAR Fish Catch Report (commercial only, if landed in Hawaii)	N/A

[1]Not identified as SBRM, however observers could be required by regulation (§ 665.207), and observer data could be used to supplement logbook data.

4 IMPACTS OF THE PROPOSED ACTION

Section 303(a)(9) of the Magnuson-Stevens Act requires that a fishery impact statement be prepared for each FMP or FMP amendment. A fishery impact statement is required to assess, specify, and analyze the likely effects, if any, including the cumulative conservation, economic, and social impacts, of the conservation and management measures on, and possible mitigation measures for (a) participants in the fisheries and fishing communities affected by the plan amendment; (b) participants in the fisheries conducted in adjacent areas under the authority of another Council; and (c) the safety of human life at sea, including whether and to what extent such measures may affect the safety of participants in the fishery.

The proposed action would modify the language in the FEPs to update the existing SBRMs identified for fisheries under the Council jurisdiction for consistency with new guidance issued by NMFS. The action would not modify or remove any existing data collection methodologies, and does not recommend any new data collection methodologies to be implemented. The action would also not result in changes to fishing location, timing, effort, authorized gear types, access to fishery resources, or harvest levels. Due to the limited scope, the proposed action is not anticipated to impact (a) participants in the fisheries and fishing communities affected by the plan amendment; (b) participants in the fisheries conducted in adjacent areas under the authority of another Council; nor (c) the safety of human life at sea, including whether and to what extent such measures may affect the safety of participants in the fishery.

Additionally, this action is not anticipated to have impacts on fishery resources, protected resources, habitat, nor socioeconomic setting, and thus qualifies for a categorical exclusion (CE) from NEPA requirements to conduct an Environmental Assessment (EA) or Environmental Impact Assessment (EIS).

5 MAGNUSON-STEVENS ACT NATIONAL STANDARDS

Section 301(a)(1) of the Magnuson-Stevens Act requires that the fishery management plans prepared by the Council to be consistent with the 10 National Standards established under Section 301. This section provides a brief discussion on the proposed action's consistency with the standards.

National Standard 1 — *Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.*

The proposed action makes no changes to current conservation and management measures. The SBRMs identified in the FEPs helps to assess the amount and type of bycatch occurring in each fishery, and where appropriate, to evaluate the impact of bycatch morality on fish stocks.

National Standard 2 — *Conservation and management measures shall be based upon the best scientific information available.*

The proposed action makes no changes to current conservation and management measures. The SBRMs identified in the FEPs helps to assess the amount and type of bycatch occurring in each fishery, which would inform development of conservation and management measures if the Council determines that bycatch mitigation measures are necessary. Any conservation and management measures would be developed based on the best scientific information available.

National Standard 3 — *To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.*

The proposed action makes no changes to the way fish stocks are managed. The data collection methodologies that constitute SBRM are implemented for each fishery or island area.

National Standard 4 — *Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be: (A) fair and equitable to all such fishermen, (B) reasonably calculated to promote conservation, and (C) carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.*

The proposed action makes no changes to current conservation and management measures, and does not change or create allocations or assignments of fishing privileges. The data collection methodologies that constitute SBRM do not discriminate between residents of different states.

National Standard 5 — *Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources, except that no such measure shall have economic allocation as its sole purpose.*

The proposed action makes no changes to conservation and management measures, and does not affect the efficiency in utilization of fishery resources.

National Standard 6 — *Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.*

The proposed action makes no changes to conservation and management measures. The 2017 final rule states that different SBRM may be appropriate for different fisheries due to the inherent diversity of fisheries. The FEPs identify the primary fishery data collection

methodologies in each fishery as the SBRM, which vary among fisheries according to their operational and bycatch characteristics.

National Standard 7 — *Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.*

The proposed action makes no changes to conservation and management measures, and does not change any existing data collection methodologies implemented for fisheries managed under the FEPs.

National Standard 8 — *Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirements of National Standard 2, in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.*

The proposed action makes no changes to conservation and management measures, and thus would not alter the way the fisheries operate or data collection programs are implemented in ways that would affect fishing communities.

National Standard 9 — *Conservation and management measures shall, to the extent practicable, (A) minimize bycatch, and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.*

The purpose of a SBRM is to collect, record, and report bycatch data in a fishery that, in conjunction with other information, are used to assess the amount and type of bycatch occurring in the fishery and inform the development of conservation and management measures that, to the extent practicable, minimize bycatch and bycatch mortality. SBRM does not include the methods used to assess bycatch nor the development of measures to minimize bycatch or bycatch mortality. Bycatch information collected through the SBRMs may be used to inform and develop mitigation measures. Bycatch is limited for most of archipelagic fisheries operating under the FEPs. The Council has developed bycatch mitigation measures for longline fisheries operating under the Pelagic FEP, and fishery performance against those measures continue to be monitored through the SBRMs. If the Council identifies additional needs for minimizing bycatch and bycatch mortality through information collected through the SBRM, the Council may develop conservation and management measures in the future, as appropriate.

National Standard 10 — *Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.*

The proposed action makes no changes to conservation and management measures, and thus would not alter the way the fisheries operate or data collection programs are implemented in ways that would affect the safety of human life at sea.

6 LIST OF PREPARERS

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APPENDIX A: EXCERPTS OF EXISTING SBRM PROVISIONS IN THE 2009 FEPS

2009 American Samoa FEP
§ 8.2.1.8 Bycatch Reporting

Bycatch information on American Samoa's demersal fisheries is collected via creel surveys as described in Chapter 5. For information on bycatch measures required in the American Samoa fisheries, see Sections 5.3.5, 5.4.6, 5.5.7, and 5.6.7. For general information on bycatch issues in each fishery in American Samoa refer to Section 4.2.3, 4.3.3, and 4.4.3 of this document. For specific information on standardized bycatch reporting methodologies see Amendment 6 (Supplement) to the Bottomfish FMP, Amendment 10 (Supplement) to the Crustaceans FMP, Amendment 4 (Supplement) to the Precious Corals FMP (WPRFMC 2002) and the Coral Reef Ecosystems FMP.

Bycatch data sources for the region's bottomfish fisheries are listed in Table 19 below. Creel surveys (shore-side surveys of vessel-based and/or shoreline fishery participants) are conducted year-round in American Samoa. These surveys cover fishing by persons engaged in subsistence, recreational, charter, and commercial fishing. The creel survey programs have been in place in American Samoa since 1985. The creel survey data are collected by the American Samoa Department of Marine and Wildlife Resources) which uses them to generate annual effort and catch estimates using algorithms developed with the assistance of WPacFIN. The agencies submit annual report modules to the Council and the respective Plan Teams compile them into the annual SAFE reports.

In response to the 1998 Sustainable Fisheries Act MSA Amendment regarding bycatch reporting, the creel survey instruments were modified in 1999 to include collection of bycatch data, which is recorded by species, number and/or weight, and condition (live, dead/injured). Fishery-wide bycatch estimates are derived from the sample data and expressed in SAFE report in absolute terms (by number or weight), and as a percent of the total catch, by species and condition.

Table 9: Bycatch Reporting Methodology for American Samoa Demersal Fisheries

	Observer Programs[5]	NMFS Federal Logbook Programs (EEZ waters)	Creel Surveys (all waters)
Bottomfish	None	None	Am. Samoa DMWR Boat-based, Shore-based Creel Surveys
Coral Reef Ecosystem species	None	Federal logbook required for all PHCRT catch and effort	Am. Samoa DMWR Boat-based, Shore-based Creel Surveys
Precious Corals	None	Federal logbook required for all catch and effort	None
Crustaceans	None	Federal logbook required for all lobster catch and effort	Am. Samoa DMWR Boat-based, Shore-based Creel Surveys

[5] Pursuant to the Endangered Species Act NMFS may require fishing vessels in fisheries identified through an annual determination process to carry Federal observers (72 FR 43176, August 3, 2007).

Bycatch by bottomfishing vessels over 50 ft in length fishing in EEZ waters around Guam is collected via federal logbooks. Bycatch information on other demersal fisheries in the Mariana Archipelago is collected via creel surveys as described in Chapter 5.

In response to the 1998 Sustainable Fisheries Act MSA Amendments regarding bycatch reporting, the creel survey instruments were modified in 1999 in order to include collection of bycatch data, which is recorded by species, number and/or weight, and condition (live, dead/injured). Where possible, fishery-wide bycatch estimates are derived from the sample data and expressed in SAFE report in absolute terms (by number or weight), and as a percent of the total catch, by species and condition. Bycatch data sources for the region's bottomfish fisheries are listed in Table 29 below. Indicated for each program or survey instrument is the main agency responsible for implementing the data collection program. Additional agencies may be involved in collecting, managing, interpreting, and disseminating the data, as described above. Not included in the table are fishery-independent sources of bycatch data and sources of fisheries data that do not generally provide information on bycatch, such as programs that monitor fish sales.

Table 10: Bycatch Reporting Methodology for Mariana Archipelago Demersal Fisheries

	Observer Programs[6]	NMFS Federal Logbook Programs (EEZ waters)	Creel Surveys (all waters)
Guam Bottomfish	None	Federal logbook required for catch and effort from vessels > 50 ft.	DAWR: Guam Offshore Creel Census, Inshore Creel Survey
CNMI Bottomfish	None	Federal logbook required for all catch and effort from commercial vessels	DFW: CNMI Offshore Creel Survey
Coral Reef Ecosystem species	None	Federal logbook required for all catch and effort 3-200 miles from shore	DAWR: Guam Offshore Creel Census, Inshore Creel Survey DFW: CNMI Offshore Creel Survey, Inshore Creel Census
Precious Corals	None	Federal logbook required for all catch and effort	DAWR: Guam Offshore Creel Census, Inshore Creel Survey DFW: CNMI Offshore Creel Survey, Inshore Creel Census
Crustaceans	None	Federal logbook required for all lobster and deepwater shrimp catch and effort	DAWR: Guam Offshore Creel Census, Inshore Creel Survey DFW: CNMI Offshore Creel Survey, Inshore Creel Census

For specific information on standardized bycatch reporting methodologies see Amendment 6 (Supplement) to the Bottomfish FMP, Amendment 10 (Supplement) to the Crustaceans FMP, Amendment 4 (Supplement) to the Precious Corals FMP (WPRFMC 2002) and the Coral Reef Ecosystems FMP (WPRFMC 2001).

[6] Pursuant to the Endangered Species Act, NMFS may require fishing vessels in fisheries identified through an annual determination process to carry Federal observers (72 FR 43176, August 3, 2007).

For general information on bycatch issues in Hawaii Archipelago demersal fisheries refer to Chapter 4. For information on measures to reduce bycatch, see Chapter 5. Bycatch reporting is accomplished via the State and Federal reporting requirements described in Chapters 4 and 5.

Bycatch data sources for the region's bottomfish fisheries are listed in Table 38 below. Indicated for each program or survey instrument is the main agency responsible for implementing the data collection program. Additional agencies may be involved in collecting, managing, interpreting, and disseminating the data, as described above. Not included in the table are fishery-independent sources of bycatch data and sources of fisheries data that do not generally provide information on bycatch, such as programs that monitor fish sales. The bycatch-related forms used in each of these data collection programs are included in Appendix 1 of Amendment 6 to the Bottomfish FMP, Amendment 10 to the Crustaceans FMP and Amendment 4 to the Precious Corals FMP. Ensuring compliance with reporting requirements is difficult as data collection for these fisheries is conducted via non-Federal programs over which the Council and NMFS have limited authority.

Table 11: Bycatch Reporting Methodology for Hawaii Archipelago Demersal Fisheries

	Observer programs[7]	**NMFS Federal Logbook programs (EEZ waters)**	**HDAR State Logbook Programs (All waters)**	**Creel surveys (All waters)**
NWHI Bottomfish	NMFS: 1981-1982, 2003 - 2005 HDAR: 1990-1993 All fishing vessels must carry an observer when directed to do so by the NMFS Regional Administrator.	HDAR NWHI Bottomfish Trip Daily Log meets Federal requirement	NWHI Bottomfish Trip Daily Log	None
MHI Bottomfish	None	Federal reporting requirement recommended by Council	Fish Catch Report (commercial only)	HI Marine Recreational Fishing Survey
Coral Reef Ecosystem species	None	Required for all PHCRT catch and effort	Fish Catch Report (commercial only)	HI Marine Recreational Fishing Survey
Precious Corals	None	Required for all catch and effort	Fish Catch Report (commercial only)	None

[7] Pursuant to the Endangered Species Act, NMFS may require fishing vessels in fisheries identified through an annual determination process to carry Federal observers (72 FR 43176, August 3, 2007).

Crustaceans	All fishing vessels must carry an observer when requested to do so by the NMFS Regional Administrator.	Required for all lobster and deepwater shrimp catch and effort	Fish Catch Report (commercial only)	HI Marine Recreational Fishing Survey

2009 PRIA FEP
§ 8.2.1.8 Bycatch Reporting

For general information on bycatch issues in PRIA fisheries refer to Sections 5.3.6, 5.4.6, 5.5.6, and 5.6.6. Bycatch reporting is accomplished via the Federal logbook requirements described in Chapter 5. Bycatch data sources for the region's bottomfish fisheries are listed in Table 19 below.

Table 12: Bycatch Reporting Methodology for PRIA Demersal Fisheries

	Observer programs[8]	**NMFS Federal Logbook Programs (EEZ waters)**	**Creel Surveys (all waters)**
Bottomfish	None	Federal logbook required for all catch and effort	None
Coral Reef Ecosystem species	None	Federal logbook required for all PHCRT catch and effort Federal logbook required for all CHCRT catch and effort in low-use MPAs (Johnston, Wake, Palmyra)	None
Precious Corals	None	Federal logbook required for all catch and effort	None
Crustaceans	None	Federal logbook required for all catch and effort	None

2009 Pelagics FEP
§ 8.2.1.8 Bycatch Reporting

Bycatch and protected species interactions are assessed and reported in the Hawaii-based longline fishery through a logbook program and a recently expanded vessel observer program. Bycatch in the American Samoa fishery is measured through creel surveys and a Federal logbook program, and is further assessed through a vessel observer program. Bycatch in the other Council-managed pelagic fisheries is monitored through local catch reports and creel surveys with federal oversight. In addition, any fishing vessel (commercial or non-commercial) operating in the territorial seas or EEZ of the U.S. in a fishery identified through NMFS' annual determination process must carry an observer when directed to do so. For additional information on bycatch provisions including reporting please refer to the Council's

[8] Pursuant to the Endangered Species Act NMFS may require fishing vessels in fisheries identified through an annual determination process to carry Federal observers (72 FR 43176, August 3, 2007).

Amendment 8 (Supplement) to the Pelagics FMP (December 20, 2002). Additional information on bycatch reduction measures may be found in Section 5.5.14 of this document.

Bycatch data sources in the U.S. pelagic fisheries in the WCPO are listed in Table 16 below. Indicated for each program or survey instrument is the main agency responsible for implementing the data collection program and the years for which data are available. Additional agencies may be involved in collecting, managing, interpreting, and disseminating the data. Not included in the table are fishery-independent sources of bycatch data and sources of fisheries data that do not generally provide information on bycatch, such as programs that monitor fish sales. The bycatch-related forms used in each of these data collection programs are included in Appendix 1 of Amendment 8 to the Pelagics FMP.

Table 13: Bycatch Reporting Methodology for Pacific Pelagic Fisheries

	Observer programs[9]	**Logbook programs**	**Creel surveys**
Hawaii-based Longline	NMFS: 1994-present	NMFS W. Pacific Daily Longline Fishing Log	None
America Samoa-based Longline	NMFS: 2006-present	NMFS W. Pacific Daily Longline Fishing Log	DMWR Offshore Survey
Hawaii-based Small Boats	None	HDAR Fish Catch Report (commercial only)	HI Marine Recreational Fishing Survey
American Samoa-based Small Boats	None	None	DMWR Offshore Survey
CNMI-based Small Boats	None	None	DFW Offshore Census
Guam-based Small Boats	None	None	DAWR Offshore Census
PRIA Small Boats	None	NMFS PRIA Troll/Handline Logbook HDAR Fish Catch Report (commercial only, if landed in Hawaii); USFWS Midway Sports Fishing Boat Trip Log (if based on Midway);	HI Marine Recreational Fishing Survey (if landed in Hawaii)
U.S. Albacore Boats	None	NMFS HSFCA Logbook (EEZ waters) HDAR Albacore Trip Report (if landed in Hawaii)	None
U.S. Purse Seine Boats	SPC: 1988-present	SPC Regional Purse Seine Logsheet	None
U.S. Squid Jig Boats	NMFS : 2008-present	NMFS HFSCA logbook NMFS Squid Jig logbook HDAR Fish Catch Report (commercial only, if landed in Hawaii)	None

[9] Pursuant to the Endangered Species Act NMFS may require fishing vessels in fisheries identified through an annual determination process to carry Federal observers (72 FR 43176, August 3, 2007).