

Omnibus Fishery Ecosystem Plan Amendment
Western Pacific Region
Compliance with Regulatory Guidance on
Standardized Bycatch Reporting Methodologies

Amendment 6 to the Fishery Ecosystem Plan for American Samoa Archipelago

Amendment 7 to the Fishery Ecosystem Plan for the Mariana Archipelago

Amendment 6 to the Fishery Ecosystem Plan for the Hawaii Archipelago

Amendment 3 to the Fishery Ecosystem Plan for the Pacific Remote Island Areas

Amendment 12 to the Fishery Ecosystem Plan for the Pelagic Fisheries of the
Western Pacific Region

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Abstract

In 2017, the National Marine Fisheries Service (NMFS) published a final rule providing guidance on the requirement of the Magnuson-Stevens Fishery Conservation and Management Act that all fishery management plans (FMPs), with respect to any fishery, establish a standardized bycatch reporting methodology (SBRM) used to collect, record, and report bycatch data in a fishery. The final rule establishes requirements and provides guidance to regional fishery management councils and the U.S. Secretary of Commerce regarding the development, documentation and review of SBRMs. Council staff, in coordination with NMFS, conducted a review of the Council's five Fishery Ecosystem Plans (FEPs) for consistency with the 2017 SBRM rule. The Council at the 186th meeting in June 2021 received a staff report of this consistency review, which concluded that existing data collection, recording, and reporting methodologies can provide bycatch information consistent with the 2017 SBRM rule, so changes to these methodologies are not needed. However, the review also concluded that amendments to the FEPs were warranted to update the SBRM tables with the current primary fishery data collection methods for each fishery and to add explanations of how the SBRMs meet the purpose, as defined in the 2017 SBRM rule. The recommended amendments would also remove identified SBRMs from fisheries that target ecosystem component species (ECS), which are not currently managed under FEPs. NMFS reviewed the SBRM report and concurred that the content of the FEPs did not meet the purpose and amendments to the FEPs were warranted to update the identified SBRMs and associated descriptions.

The Council took initial action at the 186th meeting to recommend development of an omnibus amendment to update the SBRMs and associated descriptions in the FEPs for consistency with the 2017 SBRM rule, and as identified in the consistency review document. The Council at its 187th meeting in September 21, 2021, took final action on the omnibus amendment, recommending that Council staff work with NMFS to complete the omnibus amendment to update the FEPs.

This omnibus amendment document includes a summary of the 2021 consistency review, updated descriptions of how SBRMs meet the purpose, a description of the proposed action, and a discussion of expected impacts of the proposed action. The 2021 consistency review identified that the descriptions of SBRMs in the FEPs were drafted before the 2017 SBRM rule was published, and did not meet all the requirements of the rule. Accordingly, for all FEPs this omnibus amendment includes explanations of how the SBRMs meet the purpose of collecting, recording and reporting bycatch, and includes language to address potential adjustments to the identified SBRMs. Updates to the FEPs also include the following changes to SBRM tables:

- i. American Samoa Archipelago FEP and Hawaii Archipelago FEP: remove fisheries that target ECS
- ii. Mariana Archipelago FEP: add shore-based creel survey to the CNMI bottomfish SBRM and remove fisheries that target ECS
- iii. Pacific Pelagic FEP: remove creel survey from the SBRM for the American Samoa longline fishery, identify Western Pacific longline fishing logbook as SBRM for the Western Pacific general longline fishery, and remove U.S. albacore and purse seine fisheries from the SBRM table

The proposed amendments are administrative in nature, and they would not change the operation of any fishery, or create or remove any reporting requirements. Therefore no effects of the proposed omnibus amendment are expected with respect to the natural environment in the Pacific Islands Region; social, economic, or cultural conditions related to any fishery; or to the administration and enforcement of any fishery.

ABBREVIATIONS

AS FEP – American Samoa Archipelago Fisheries Ecosystem Plan
BMUS – Bottomfish Management Unit Species
Council – Western Pacific Regional Fishery Management Council
CMUS – Crustacean Management Unit Species
CML – Commercial Marine License
CNMI – Commonwealth of the Northern Mariana Islands
CPUE – Catch per Unit Effort
DAR – Division of Aquatic Resources (Hawaii)
DAWR – Department of Agriculture’s Division of Aquatics & Wildlife Resources (Guam)
DFW – Division of Fish and Wildlife (CNMI)
DMWR – Department of Marine and Wildlife Resources (American Samoa)
EEZ – Exclusive Economic Zone
ESA – Endangered Species Act
FEP – Fishery Ecosystem Plan
FMP – Fishery Management Plan
FR – Federal Register
HI FEP – Hawaii Archipelago Fisheries Ecosystem Plan
HMRFS – Hawaii Marine Recreational Fishing Survey
HSFCA –High Seas Fishing Compliance Act
IFA – Interjurisdictional Fisheries Act
Magnuson-Stevens Act – Magnuson-Stevens Fishery Conservation and Management Act
Marianas FEP – Marianas Archipelago Fisheries Ecosystem Plan
MHI – main Hawaiian Islands
MRIP – Marine Recreational Information Program
MSA – Magnuson-Stevens Fishery Conservation and Management Act
NMFS – National Marine Fisheries Service
NWHI – Northwestern Hawaiian Islands
Pelagic FEP – Pacific Pelagics Fisheries Ecosystem Plan
PFMC – Pacific Fishery Management Council
PIFMAPS – Pacific Insular Fisheries Monitoring and Assessment Planning Summit
PIFSC – Pacific Islands Fisheries Science Center
PIRO – Pacific Islands Regional Office
PRIA – Pacific Remote Island Areas
PRIA FEP – Pacific Remote Island Areas Fisheries Ecosystem Plan
PRIMNM – Pacific Remote Islands Marine National Monument
SAFE Report – Stock Assessment and Fishery Evaluation report
SBRM – Standardized Bycatch Reporting Methodology
SFA – Sustainable Fisheries Act
SFD – Sustainable Fisheries Division
SPC – South Pacific Community
SSC – Scientific and Statistical Committee
SWFSC – Southwest Fisheries Science Center
WPacFIN – Western Pacific Fisheries Information Network

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1 INTRODUCTION

The Western Pacific Regional Fishery Management Council (Council) and the National Marine Fisheries Service (NMFS) manage fishing in the Exclusive Economic Zone (EEZ) around the U.S. Pacific Islands. The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act or MSA) requires the Council to develop fishery management plans¹ (FMPs) for each fishery under its area of management authority (i.e., EEZ or federal waters) that requires conservation and management. Under four Fishery Ecosystem Plans (FEPs), which are used in the Pacific Islands Region in place of FMPs, 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 Mariana Islands (CNMI)), and the Pacific Remote Island Areas (PRIA). The Council and NMFS also manage fishing for pelagic species in the EEZ around the U.S. Pacific Islands and on the high seas under the FEP for Pelagic Fisheries of the Western Pacific Region. These five FEPs are the subject of this omnibus amendment.

Background

In 1996, the Magnuson-Stevens Act was re-authorized and amended by enactment of the Sustainable Fisheries Act (SFA). The 1996 SFA amendments added two key requirements to 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.

The Magnuson-Stevens Act 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. 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)). The definition does not include fish released alive under a recreational

¹ The Council transitioned from its original fishery-based FMPs to ecosystem-based FEPs in 2009 (WPRFMC 2009a-e). Where the plans are referred to as FMPs in this document, these point to the original fishery-based FMPs for this region, or to reference the terms used generally in the Magnuson-Stevens Act and in the 2017 SBRM rule.

catch and release fishery management program (MSA §3(2)). The Magnuson-Stevens Act 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)).

To address the 1996 SFA requirements for bycatch, the Council prepared a comprehensive amendment to all four of its FMPs in existence at that time.² In September 1998, the following amendments were published and transmitted to NMFS for review: Amendment 6 to the Bottomfish FMP, Amendment 8 to the Pelagic FMP, Amendment 10 to the Crustaceans FMP, and Amendment 4 to the Precious Corals FMP. NMFS partially approved these 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 Pelagic FMPs. To address NMFS' concerns, the Council prepared a joint supplement to Amendment 6 to the Bottomfish FMP and Amendment 8 to the Pelagic FMP, which was published in December 2002 and approved by NMFS in July 2003 (68 FR 46112).

The 1998 and 2002 FMP³ 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 SBRMs for each fishery. The SBRMs identified in these four amendments were: federal observer and logbook programs, as well as non-federal logbook (e.g. State of Hawaii Fish Catch Reports) and creel survey (shore-side surveys of vessel-based and/or shore-side fishing) programs. Excerpts of the existing SBRM provisions in the 2009 FEPs are provided in Appendix A.

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 Magnuson-Stevens Act (82 FR 6317, January 19, 2017). The rule further requires that the Council, in coordination with NMFS, conduct a review of its FEPs for consistency with the 2017 SBRM rule.

NMFS' 2017 SBRM rule requires that each FMP establish an SBRM as follows:

- 1) Identify the procedure or procedures that constitute the SBRM for the fishery. The required procedures 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 as defined in the 2017 SBRM rule. The purpose of the standardized bycatch reporting methodology is to “collect, record, and report 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 to and inform the development of conservation and management measures that, to the extent

² At the time of the 1996 SFA amendments, the Council had FMPs managing four fisheries: bottomfish, pelagic, crustaceans, and precious corals. The Coral Reef Ecosystem FMP was implemented in 2004.

³ The SBRM identified for each fishery plan in the 1998 and 2002 bycatch amendments were incorporated into the 2009 Council's transition to FEPs by reference, including the background information for the identified methodologies.

practicable, minimize bycatch and bycatch mortality.” When establishing or reviewing an SBRM, a Council must address the following:

- a. Characteristics of bycatch in a fishery, such as amount and type;
 - b. Feasibility from 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.
- 3) Provide guidance to NMFS on how to adjust implementation of the SBRM while still satisfying the requirements, recognizing that costs and funding may vary from year.

The 2017 SBRM rule provides that different SBRMs may be appropriate for different fisheries due to the inherent diversity of fisheries, and also provides that bycatch assessment is not part of an SBRM. Finally, the 2017 SBRM rule clarifies that a review of standardized reporting methodologies should be conducted at least once every 5 years to verify compliance.

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 in accordance with the 2017 SBRM rule. In 2020, Council staff in coordination with the Pacific Islands Regional Office (PIRO) Sustainable Fisheries Division (SFD) conducted a consistency review (Section 2). The review concluded that existing data collection methodologies meet the regulatory requirements. However, the review also concluded that FEP amendments were warranted to update the SBRMs to clearly identify the current primary data collection methodologies as SBRMs for certain fisheries, and to explain how the SBRMs meet the purpose of collecting, recording, and reporting bycatch data in a fishery.

1.3 Council Actions

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

The Council at the 186th meeting in June 2021 received the FEP Consistency Review and Recommendations report (WPFMC 2021), which concluded that amendments to the FEPs are warranted to update the SBRM tables with the current primary fishery data collection methods for each fishery and to remove identification of SBRMs from fisheries that target ecosystem component species (ECS), and to explain how the SBRMs meet the requirements of the 2017 SBRM rule. At this meeting, the Council took initial action, recommending that staff work with PIRO SFD to develop an omnibus amendment to bring the FEPs into compliance, consistent with the review document.

The Council at the 187th meeting in September 2021 took final action on the omnibus amendment as follows:

1. Update the SBRM tables in the FEPs as follows:
 - a. American Samoa FEP and Hawaii FEP: remove fisheries that target ECS;

- b. Marianas FEP: add shore-based creel survey to the CNMI bottomfish SBRM and remove fisheries that target ECS; and
 - c. Pelagic FEP: remove creel survey from the SBRM for the American Samoa longline fishery, identify Western Pacific longline fishing logbook as SBRM for the Western Pacific general longline fishery, and remove U.S. Albacore and purse seine fisheries from the SBRM table.
- 2. For all FEPs, add an explanation of how the SBRMs meet the purpose of collecting, recording, and reporting bycatch, and including language to address potential adjustments to the identified SBRMs.

2 REVIEW OF FEP CONSISTENCY WITH NEW SBRM REQUIREMENTS

As discussed above, Council staff in coordination with PIRO SFD conducted a consistency review to evaluate whether the existing SBRMs in the five FEPs complied with the 2017 SBRM rule (WPFMC 2021). The review was presented at the 186th Council meeting in June 2021. This section summarizes the consistency review, specifically whether the current FEPs address the three main aspects of the 2017 SBRM rule described in section 1.1: (1) identify the SBRMs for each fishery, (2) explain how the SBRM meets the purpose as defined in the rule (i.e., collect, record, and report bycatch), and (3) provide guidance to NMFS on how to adjust implementation of the SBRM. The proposed amendments to the five FEPs are identified in the summary review and are described in Section 3.

In general, the FEPs identify the primary fishery data collection methodologies as the SBRMs for each fishery. The specific SBRMs identified in the FEPs are described in Sections 2.1-2.5 of this document. There are new data collection methods 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 SBRMs in future reviews (i.e., the 5-year SBRM review requirement (82 FR 6317)). These will not be discussed further in this document.

Most of the available bycatch data are summarized in Annual Stock Assessment and Fishery Evaluation (SAFE) reports generated by the Council's Plan Teams and reviewed by several Council advisory bodies including the Scientific and Statistical Committee (SSC). While the SAFE and other Plan Team reports provide information relating to bycatch assessment, they are not part of the SBRMs.

After establishing SBRMs in the 1998 and 2000 FMP amendments, the Council designated ECS in the American Samoa, Mariana Archipelago, and Hawaii Archipelago FEPs in 2019 through an omnibus amendment (84 FR 2767, February 8, 2019). Information regarding fisheries that catch ECS are consolidated in Section 2.6 of this amendment.

2.1 American Samoa FEP

2.1.1 Bottomfish Fishery

The bottomfish fishery in American Samoa is a multispecies fishery that catches fish from several families: jacks (Carangidae), emperors (Lethrinidae), snappers (Lutjanidae), and groupers (Serranidae). It is a hook-and-line fishery, and the use of bottom trawls, bottom set gillnets,

poisons, and explosives to target bottomfish management unit species (BMUS) or ECS is prohibited under the AS FEP and implementing regulations. Hook-and-line gear strongly selects for carnivores, which tend to be favored in markets (WPRFMC 2002). Bottomfish fishing in American Samoa is generally done from up double-hulled aluminum “alia” catamarans less than 30 feet in length.

NMFS and the Council have implemented gear restrictions as regulatory measures to reduce bycatch from destructive fishing methods. Specifically, fishing for bottomfish with bottom trawls and bottom set gillnets is prohibited, as is the possession or use of any poisons, explosives, or intoxicating substances for the purpose of harvesting bottomfish (51 FR 27413, August 27, 1986; WPRFMC 2002a).

2.1.1.1 Whether the FEP identifies SBRM for this fishery?

Based on the Council and NMFS coordinated review summarized below, the creel surveys and federal logbooks identified as SBRM in the American Samoa Archipelago FEP (AS FEP) provide an appropriate means of collecting, recording, and reporting bycatch data, satisfying the recording and reporting requirements of the 2017 SBRM rule (WPFMC 2021). 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. Therefore, no change to the AS FEP is needed for the identification of SBRMs for this fishery.

The Council established the SBRMs for the American Samoa bottomfish fishery in the 2002 Bottomfish FMP Amendment 6 (Supplement), which was carried forward in the 2009 AS FEP. These amendments identified the American Samoa Department of Marine and Wildlife Resources (DMWR) boat-based and shore-based creel surveys as the SBRMs for this fishery. The creel survey methodology is summarized here, and was initially described in section 4.1.2.3 of the bycatch amendment (WPRFMC 2002); additional detail on recent implementation can be found in Annual SAFE reports. The SAFE reports are not, however, a component of the SBRM for this fishery.

Boat-based and shore-based creel surveys are conducted year round in American Samoa, and cover fishing by vessels engaged in subsistence, recreational, charter, and commercial fishing. The creel survey program has been in place in American Samoa since 1985. Creel survey data are collected by the American Samoa DMWR and are used to generate annual effort and catch estimates using algorithms developed with the assistance of Pacific Islands Fisheries Science Center (PIFSC) Western Pacific Fisheries Information Network (WPacFIN). 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 survey has two primary components; an effort survey to estimate the number of fishing trips and field interviews with fishermen to survey catch during fishing trips. Data from these two components are combined to generate an estimate of catch. For the effort survey component, the DMWR data collection staff conducts the initial “participation run,” counting the number of boats in the marina and boat-trailers on the boat ramps. In the case of shore-side fishing, DMWR staff drives to the assigned survey zones to count the number of fishermen and log the number and type of gear used. For the field interview component, 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. To collect bycatch information, DMWR staff asks fishermen if they released any fish and then obtains bycatch data on species, number and/or weight, and condition (live, dead/injured). For further description of the creel survey see the Annual SAFE reports.

Under regulations at 50 CFR 665.165 fishing vessels must carry an observer when directed to do so by the Regional Administrator. However, there is currently no active observer program for the American Samoa bottomfish fishery and an observer program is not identified as an 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.

2.1.1.2 Whether the FEP explains how the SBRM is used to collect, record, and report bycatch data?

The description of the SBRM in the AS FEP does not explain how the SBRM meets the purpose as described in the 2017 SBRM rule, since the 2017 requirement for an explanation was not mandated until after the 2002 FMP and 2009 AS FEP amendments were approved. An amendment to the AS FEP is therefore needed to add an explanation of how the creel survey meets purpose of the rule. The explanation of how the creel survey meets the purpose follows in this section, and the proposed amendment to the FEP is found in Section 3.1.

Evaluation of the Requirements for SBRM (§600.1610(a)(2)(i)-(iv)):

a) Bycatch characteristics (amount and type of bycatch)

The bottomfish fishery is largely a boat-based operation occurring primarily in Territorial waters. Some harvest of BMUS also comes from shore-based fishing. Catch and bycatch of both components of this fishery are captured in the creel surveys. As established by the creel surveys, bycatch amount (expressed in number of fish) in this fishery is generally negligible (WPFMC 2021a). This is due to the selective nature of the hook and line gear (i.e., hook and line can only catch one fish per hook), and fish species can be targeted by depth and hook size. Also, 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 been no reporting of regulatory discards in the creel surveys because any fish caught are kept for personal use or sale). Finally, most non-target fish species (i.e., ECS) that are caught incidentally during bottomfish fishing operations are retained for personal use or may be shared among the community and the village elders, and thus not considered bycatch (MSA§600.350(c)(2)(i)).

b) Feasibility of cost, technical, and operational perspectives of the SBRM

The AS FEP does not discuss the feasibility of cost to operate and maintain creel surveys, but these surveys have been in place since 1985. The creel survey provides an appropriate methodology from a cost, technical, and operational perspectives.

From a cost perspective, the cost of collecting bycatch information is included in the cost of conducting the creel surveys. The creel surveys are funded through a combination of federal and non-federal funding sources, including the Cooperative Agreement between DMWR and the

U.S. Fish and Wildlife Service (USFWS) Sportfish Restoration Funds (SFR), NOAA PIRO Interjurisdictional Fisheries Act (IFA) funds, and NOAA PIFSC WPacFIN grant funds. The collection, recording, and reporting of bycatch are funded through the USFWS SRF for the shore-based creel survey and IFA for the boat-based creel survey. In addition, with technical support from PIFSC, DMWR has continuously conducted the creel survey for its fishery data collection since 1985 (WPRFMC 2002). The funding may fluctuate, but base-funding has provided stable support for these surveys since 1985, enabling the creel methodology to monitor bycatch over time. Because the creel surveys have been used to collect catch data continuously for over 36 years in this fishery, it is indicative that the cost of the SBRM is feasible.

The creel survey is feasible from a technical and operational perspective for collecting bycatch information in the bottomfish fishery. It is conducted year-round and covers fishing by persons engaged in subsistence, recreational, charter, and commercial fishing (WPRFMC 2009a). DMWR staff conduct interviews on scheduled survey days (four survey days on weekdays and one survey day on weekend). During the scheduled catch interview period, the surveyors question the intercepted fishermen on whether they caught and released any fish and inquire about the species and the amount of fish released. The creel survey form 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 2021 SAFE report indicates that the number of sample days has been fairly stable, but the number of regular survey interviews has decreased over time. The 20-year average is 259 surveys per year, the 10-year average is 202, and the 5-year average is 144; in 2021, only 77 regular catch interviews were conducted even as sample days were average. This decrease in 2021 is likely due to acute decreases in fishing during the COVID-19 pandemic, and does not indicate that the methodology is not feasible. A PIFSC report analyzing territorial creel survey programs noted challenges related to funding, geography, and staffing that 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.

Other potential options to gather bycatch data, such as observer programs, could 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 such as this one. The small size of vessels in the fishery also makes the placement of observers operationally 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.

c) Uncertainty of data resulting from the SBRM

Generally, a standardized reporting methodology can be designed so that the uncertainty associated with bycatch data can be described quantitatively or qualitatively (50 CFR 600.1610(a)(2)(iii)). For American Samoa bottomfish, uncertainty is not captured quantitatively

because bycatch is estimated as a direct tally of discards and losses to predation. This tally or count is not mathematically expanded to provide total bycatch estimates for the fishery in a way that provides a statistical measure of uncertainty (e.g., a standard deviation or confidence interval), because the bycatch rate is extremely low and the Council has not identified this additional level of detail as a need. If expansion methodologies are developed that could 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.

Qualitatively, factors that affect uncertainty of bycatch data are related to practical constraints of the creel survey. Since these surveys do not record data from all fishing trips, the accuracy of bycatch estimates is a function of sampling intensity (WPRFMC 2002). The majority, if not all, of the catch in the bottomfish fishery are kept (as a matter of cultural practice). Thus, bottomfish fishing trips with bycatch are rare and the chances of intercepting those trips are relatively small given the nature of the creel survey. Another factor that contributes to uncertainty is that surveyors do not observe bycatch directly, since it is not generally brought to port. Accuracy of bycatch data may therefore be limited by the memories of fishermen and the difficulties in accurately identifying fish, mammals, sea turtles, and seabirds to the species level. Fishermen may also avoid reporting bycatch and any protected species interaction in fear of federal violations. The number of fish lost due to depredation may also be underestimated since the events occur at depth. There may also be an issue with consistency in asking about bycatch during the catch interview, as sometimes fishermen do not want to be delayed from delivering their fish to the market and getting paid. This can result in abbreviating the catch interview to the most pertinent questions and may result in incomplete interviews.

While data collection methodologies such as logbooks and observer programs have the potential to provide more precise estimates of bycatch, the creel survey is an appropriate and feasible SBRM for this fishery due to the fishery characteristics and known bycatch characteristics (small fishery using selective gear that retains most fish species caught).

Overall, there are some uncertainties in bycatch data because not all trips are being accounted for and bycatch events are rare. However, considering that reported bycatch rates are low in the fishery, NMFS and the Council have not identified uncertainty as a substantial issue with current SBRM.

d) Data use in determining amount and type of bycatch

Creel survey data including bycatch data collected by DMWR are reported to PIFSC for storage in a database. The collected raw data are summarized and incorporated into Annual SAFE reports by the Council's Plan Teams (e.g., WPRFMC 2022a). The Annual SAFE reports summarize the total number of fish released and percentage of catch released by year, based on the raw counts from creel survey interviews. These counts are not expanded to provide total bycatch estimates for the fishery, but still provide useful metrics for NMFS and the Council to identify potential bycatch concerns. SAFE reports are reviewed by the Council and several advisory bodies including the SSC for additional comments and interpretation before being finalized by the regulatory deadline of June 30th of each calendar year. Completed SAFE reports are publically available for use through the Council's website.

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 PIFSC on data collection systems and methodological 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.

2.1.1.3 Whether the FEP provides guidance on how to adjust implementation of the SBRM?

The AS FEP does not address how NMFS should adjust funding to these programs if there is a change in available funds, as decisions would be made based on factual considerations on a case-by-case basis. Generally, costs will be reviewed no less than every five years as is required by the 2017 SBRM rule. If funding is reduced, fisheries data collection is not likely to be eliminated, but may be reduced which could potentially increase uncertainty in bycatch estimates. The Council, the SSC, and NMFS may review any potential changes in consultation with local agency partners to assess and mitigate impacts to data quality and continuity.

Overall, given the small scale of the American Samoa bottomfish fishery and negligible bycatch, the creel survey is an appropriate SBRM. If the Council identifies potential bycatch concerns based on creel survey data or other information, the Council may in the future recommend additional data collection efforts to improve bycatch estimates to inform the 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 SSC, Plan Teams, and Advisory Panels may also identify potential bycatch concerns based on local expert knowledge, as well as other methods that would improve methods to collect, record, and report data.

2.2 Mariana Archipelago FEP

2.2.1 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 “high-liners” (fishermen with relatively large volume of catch) in the fishery are capable of targeting deep snapper separately from the shallow fishes. Other Guam bottomfish fishermen mostly catch the shallower species. The deepwater snappers, however, are more favored in the restaurants that cater to tourists and the military based in Guam. Deepwater snappers are mostly caught on 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. On average there are three fishermen involved in a fishing trip (WPRFMC 2022c).

NMFS and the Council have implemented gear restrictions as regulatory measures to reduce bycatch from destructive fishing methods. Specifically, fishing for bottomfish with bottom trawls and bottom set gillnets is prohibited, as is the possession or use of any poisons, explosives, or intoxicating substances for the purpose of harvesting bottomfish (51 FR 27413, August 27, 1986; WPRFMC 2002a).

2.2.1.1 Whether the FEP identifies SBRM for this fishery?

Based on the Council and NMFS coordinated review summarized below, the creel surveys and federal logbooks identified as SBRM in the Marianas Archipelago FEP (Marianas FEP) provide an appropriate means of collecting, recording, and reporting bycatch data, satisfying the recording and reporting requirements of the 2017 SBRM rule (WPFMC 2021). 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. Therefore, no change to the Marianas FEP is needed for the identification of SBRMs for this fishery.

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 conducted by the Department of Agriculture's Division of Aquatics & Wildlife Resources (DAWR), and (2) the federal logbook program required for vessels larger than 50 feet, which are collected by NMFS. Similar to the American Samoa creel survey data collection, Guam's primary data collection method is the boat-based and shore-based creel surveys. The creel survey methodology is summarized here, and was initially described in section 4.1.2.3 of the bycatch amendment (WPRFMC 2002); additional detail on recent implementation can be found in Annual SAFE reports. The boat-based fishery creel survey collects data on the island's boating activities and interviews from returning commercial and noncommercial fishermen at boat ramps/docks on the island. Essential fishery information is collected and processed from both commercial and noncommercial vessels to help better inform management decisions. The boat-based creel survey collects participation count, as well as catch and effort data based on survey maps, boat logs, and interviews at three boat ramps. The boat-based collection process occurs over multiple times during a day, multiple days in a week at the ramps and docks. To collect data on bycatch, in the interviews DAWR staff ask fishermen if they released any fish, the state of disposition, and details such as the species, number and/or weight, and condition (live, dead/injured).

The shore-based creel survey is also a stratified randomized data collection program. This program collects two types of data to estimate catch and effort information in the shore-based fishery: participation count and interview. The participation count involves counting the number of people fishing along the shoreline and their method of fishing on randomly selected days. The interview involves dialoging with fishermen to determine catch, method used, length and weights of fish, species composition, catch disposition, and if any fish were not kept (i.e., bycatch).

The catch data collected from the creel surveys are then expanded at a stratum level (quarterly vs. annually, charter vs. non-charter, weekday vs. weekend, etc.) to create estimated landings by gear type for Guam's boat-based fishery.

The second SBRM methodology of federal logbooks is used for an owner of any large vessel (greater than 50 feet) used to fish for, land, or transship BMUS or ECS in the EEZ around Guam. Federal permittees are subject to the logbook reporting requirements. Owners must have a federal permit registered for use with that vessel, and the large vessel must maintain on board an accurate and complete record of catch, effort, bycatch, and other data, such as species, size, and weight.

NMFS regulations also require that fishing vessels must carry an observer when directed to do so by the Regional Administrator (50 CFR 665.407). To date, however, observers have not been placed on vessels in Guam. Given the fishery characteristics and low bycatch statistics, observers have not been deployed, and are not identified as an SBRM. A commercial receipt book system has been used by the DAWR in Guam, and aerial surveys have also been used in Guam to collect fishing effort data, but these data collection methods do not distinguish bycatch and are also not identified as part of the SBRM.

2.2.1.2 Whether the FEP explains how the SBRM is used to collect, record, and report bycatch data?

The Marianas FEP does not provide an explanation of how the SBRMs for Guam meet the purpose as described in the 2017 SBRM rule, because the Council's development of the 2002 Bottomfish FMP Amendment 6 (Supplement) and 2009 Marianas FEP preceded the 2017 SBRM rule. An amendment to the Marianas FEP is therefore needed to add an explanation of how the SBRMs meet the purpose as defined in the rule. The explanation of how the SBRMs meet the purpose follows in this section, and the proposed amendment based on this review is described in section 3.2.

Evaluation of the Requirements for SBRM (§600.1610(a)(2)(i)-(iv)):

a) Bycatch characteristics (amount and type)

The bottomfish fishery is mostly a boat-based, handline operation that fishes in Territorial waters; however, some harvest of BMUS also comes from shore-based fishing. Catch and bycatch of both shore and boat-based components are captured in the creel surveys. The Marianas FEP estimated bycatch in this fishery is less than four percent of total catch and includes predominantly fish from the mullidae family (e.g, *Parupeneus multifasciatus*), and *Melichthys vidua*, among others (WPRFMC 2009c). During trips in 2021 that only caught BMUS, there were zero percent discards; for trips that caught non-BMUS species using the same gear, there was less than one percent discarded or released (WPRFMC 2022c). Bycatch is generally low in this fishery due to the selective nature of the hook and line gear, and because most fish species caught incidentally are retained. There are territorial minimum size limits for certain shallow water BMUS species, so this may result in regulatory discards. Bycatch data in the fishery is updated and summarized in Annual SAFE reports.

In 2021, there were no federal permits issued for the bottomfish fishery in Guam (WPRFMC 2022c). As a consequence, NMFS has not received any logbook reports associated with bottomfish permits, and there is no additional information on bycatch from this component of the SBRM.

b) Feasibility of cost, technical, and operational perspectives of the SBRM

The Marianas FEP does not discuss the feasibility of maintaining creel surveys, but the creel survey has been continuously implemented since 1982. The DAWR conducts creel surveys on Guam with support from PIFSC. The survey is conducted year-round, and covers fishing by persons engaged in subsistence, recreational, charter, and commercial fishing. Annual SAFE

reports provide a brief description of the methodology and a summary of creel survey days and interviews (WPRFMC 2022c, Table 19).

From a cost perspective, the cost of collecting bycatch information, is included in the cost of conducting the creel surveys. The creel surveys are funded through a combination of federal and non-federal funding sources, including the Cooperative Agreement between DAWR and USFWS-SRF, NOAA PIRO IFA funds, and NOAA-PIFSC WPacFIN funds. The funding may fluctuate, but base-funding support for the creel surveys has provided stable support for these surveys since 1982, enabling the creel methodology to monitor bycatch over time. Because the creel surveys have been used to collect bycatch data continuously for at least 40 years in this fishery, the duration of this methodology is indicative that the cost of the SBRM is feasible.

The creel survey is feasible from a technical and operational perspective for collecting bycatch information in the bottomfish fishery. It is conducted year-round and covers fishing by persons engaged in subsistence, recreational, charter, and commercial fishing (WPRFMC 2009a). DAWR staff conduct interviews on scheduled survey days, and during the catch interviews, surveyors question the fishermen on whether they caught and released any fish and inquire about the species and the amount of fish released. The creel survey form 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 2021 SAFE report indicates that the number of sample days has been fairly stable, but the number of regular survey interviews has increased in recent years, with the exception of 2020 due to the pandemic. This trend is illustrated by comparing the average number of surveys over different periods. The 20-year average is 643 surveys per year, the 10-year average is 675, and the 5-year average is 727. 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 four decades and is an appropriate methodology for collecting bycatch information in this fishery.

The cost of Federal logbooks are provided by NMFS' funds. At its highest point in 2011, there were only about six permits sold in the bottomfish fishery (WPRFMC 2022c). Currently, there are no bottomfish vessels larger than 50 feet operating in the fishery. During the history of this fishery, no logbooks were completed by fishermen and no logbooks were provided to NMFS. The cost of logbooks is feasible, as the logs themselves are not expensive and the cost to transfer the logbook information is absorbed by DAWR. Technically, logbooks provide useful information of catch, including bycatch when properly completed. Given that no logbooks have been supplied to NMFS, their value on an operational level is limited. Because the Council has not recommended a change, the logbook will remain as a SBRM for now.

Other potential options to gather bycatch data such as observer programs have the potential to 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 such as Guam's bottomfish fishery. The small size of vessels in the fishery also makes the placement of observers difficult from an operational perspective. 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 types of programs are not likely to be feasible in the current state of the fishery, but could be considered if there are more participants in the future.

c) Uncertainty of data resulting from the SBRM

A standardized reporting methodology can be designed so that the uncertainty associated with bycatch data can be described quantitatively or qualitatively (50 CFR 600.1610(a)(2)(iii)). For the Guam bottomfish fishery, uncertainty is not captured quantitatively because bycatch is estimated as a direct tally of discards and losses to predation. This tally or count is not mathematically expanded to provide total bycatch estimates for the fishery in a way that provides a statistical measure of uncertainty (e.g., a standard deviation or confidence interval), because the bycatch rate is extremely low and the Council has not identified this additional level of detail as a need. If expansion methodologies are developed in the future 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.

Qualitatively, factors that affect uncertainty of bycatch data are related to practical constraints of the creel survey. Since these surveys do not record data from all fishing trips, the accuracy of bycatch estimates is a function of sampling intensity (WPRFMC 2002). The majority, if not all, of the catch in the bottomfish fishery are kept (as a matter of cultural practice). Thus, bottomfish fishing trips with bycatch are rare and the chances of intercepting those trips are relatively small given the nature of the creel survey. Another factor that contributes to uncertainty is that surveyors do not observe bycatch directly, since it is not generally brought to port. Accuracy of bycatch data may therefore be limited by the memories of fishermen and the difficulties in accurately identifying fish, mammals, sea turtles, and seabirds to the species level. Fishermen may also avoid reporting bycatch and any protected species interaction in fear of federal violations. The number of fish lost due to depredation may also be underestimated since the events occur at depth. There may also be an issue with consistency in asking about bycatch during the catch interview, as sometimes fishermen do not want to be delayed from delivering their fish to the market and getting paid. This can result in abbreviating the catch interview to the most pertinent questions and may result in incomplete interviews. Overall, there are some uncertainties in bycatch data from creel surveys because not all trips are being accounted for and bycatch events are rare. However, considering that reported bycatch rates are low in the fishery, NMFS and the Council have not identified uncertainty as a substantial issue with current SBRM.

In the case of federal logbooks, uncertainties stem from the accuracy of reporting by permitted fishermen on the amount of discards. To date, 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.

While 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 (i.e., using selective gear that retains most fish species caught).

In summary, there are some uncertainties in bycatch data because not all trips are being accounted for and bycatch events are rare. However, considering that reported bycatch rates are

low in the fishery, NMFS and the Council have not identified uncertainty as a substantial issue with current SBRM.

d) Data use in determining amount and type of bycatch

Creel survey data including bycatch data collected by DAWR are reported to NMFS PIFSC for storage in a database. The collected raw data are summarized and incorporated into the Annual SAFE reports by the Council's Plan Teams (e.g., WPRFMC 2022a). The Annual SAFE reports summarize the total number of fish released and percentage of catch released by year, based on the raw counts. These counts are not expanded to provide total bycatch estimates for the fishery, but still provide useful metrics for NMFS and the Council to identify potential bycatch concerns. Similarly, SAFE reports can provide a summary of catch and bycatch data from federal logbooks. These reports would include total reported catch and total bycatch reported on logs in numbers of fish when available based on federal confidentiality requirements. The Annual SAFE reports are reviewed by the Council and several advisory bodies, including the SSC, for additional comments and interpretation before being finalized by the regulatory deadline of June 30th of each calendar year. Completed SAFE reports are publically available for use through the Council's website.

The Council also conducts data workshops aimed at improving data collection systems in the region. Reports from the 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 PIFSC on data collection systems and methodological 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.

As previously discussed, no logbooks have been provided to NMFS, thus no logbook data has been used to date to assess bycatch. While this component of the SBRM has not been used to record and collect bycatch data, the Council has not elected to remove this SBRM, in part, because there has been an interest to revive the large vessel (greater than 50 feet) sector of the Guam bottomfish fishery.

2.2.1.3 Whether the FEP provides guidance on how to adjust implementation of the SBRM?

The Marianas FEP does not address how NMFS should adjust funding to these programs if there is a change in available funds, as decisions would be made based on factual considerations on a case-by-case basis. Generally, costs will be reviewed no less than every five years as is required by the 2017 SBRM rule. If funding is reduced, fisheries data collection is not likely to be eliminated, but may be reduced which could potentially increase uncertainty in bycatch estimates. The Council, the SSC, and NMFS may review any potential changes in consultation with local agency partners to assess and mitigate impacts to data quality and continuity.

Overall, given the small scale of the bottomfish fishery in Guam and negligible bycatch, the creel survey SBRM component is appropriate for this fishery. The federal logbook SBRM has not been used, but the Council has not elected to remove this SBRM. If the Council identifies potential bycatch concerns based on creel survey data or other information, the Council may consider other data collection efforts, such as the use of federal logbooks on smaller vessels, to

improve bycatch estimates to inform the development of appropriate bycatch mitigation measures; the feasibility of future measures will be assessed in the development of a SBRM. Council advisory bodies such as the SSC, Plan Teams, and Advisory Panels may also identify potential bycatch concerns based on local expert knowledge, as well as other methods that would improve methods to collect, record, and report data.

2.2.2 CNMI Bottomfish Fishery

The CNMI bottomfish fishery is comprised of small fishing vessels (<25 foot) that fish around the islands of Saipan, Tinian, and Rota, while other larger vessels (>25 foot) are able to fish around the more distant Northern Islands (45 nm or more from Saipan). Nearshore bottomfish fishing catches are primarily shallow BMUS species, while those that fish the offshore banks (e.g., Rota Banks) and the Northern Islands (Sarigan, Agrihan, Farallon de Medinilla) fish for larger, deepwater snappers, primarily onaga (*Etelis coruscans*). In 2021, there were 18 commercial vessels permitted to fish for bottomfish in the federal waters in CNMI. There were 58 uniquely identified vessels counted in the creel survey interview files that caught BMUS in 2021. There were a total of 67 BMUS trips counted in 2021, each with an average of two fishermen per trip (WPRFMC 2022c).

NMFS and the Council have implemented gear restrictions as regulatory measures to reduce bycatch from destructive fishing methods. Specifically, fishing for bottomfish with bottom trawls and bottom set gillnets is prohibited, as is the possession or use of any poisons, explosives, or intoxicating substances for the purpose of harvesting bottomfish (51 FR 27413, August 27, 1986; WPRFMC 2002a).

2.2.2.1 Whether the FEP identifies SBRM for this fishery?

Based on the Council and NMFS coordinated review summarized below, the creel survey and federal logbooks identified as SBRM in the Marianas Archipelago FEP (Marianas FEP) provide an appropriate means of collecting, recording, and reporting bycatch data, satisfying the recording and reporting requirements of the 2017 SBRM rule (WPFMC 2021). 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. The Marianas FEP however lacks a description of the shore-based creel survey as an SBRM for the CNMI bottomfish fishery. Therefore, a change to the Marianas FEP is needed to add shore-based creel to the SBRMs identified for this fishery.

The Marianas FEP identifies two components to the SBRM for the bottomfish fishery: (1) the offshore (boat-based) creel surveys run by the CNMI Division of Fish and Wildlife (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, which was initially summarized in section 4.1.2.3 of the bycatch amendment (WPRFMC 2002), and in the Annual SAFE reports. A difference in the use of the creel survey for identifying bycatch between American Samoa and Guam from the CNMI is that the shore-based creel surveys, while conducted in the CNMI, are not currently identified as an SBRM. The following discussion will, however, include both shore- and boat-based creel because the shore-based creel is to be added as an SBRM in this amendment.

Unlike American Samoa and Guam, the data collection for bycatch in CNMI became consistent in 2000. There were several attempts in the 1980s and '90s to implement bycatch data collection, but these efforts 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 FMP amendment (WPRFMC 2002), and, as a consequence, the shore-based creel survey was not identified as an SBRM when the information in the amendment was carried over to the 2009 Marianas FEP.

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. The boat-based fishery creel survey collects data on the island's boating activities and interviews returning commercial and noncommercial fishermen at boat ramps/docks on the island. Essential fishery information is collected and processed from both commercial and noncommercial vessels to help better inform management decisions. The boat-based creel survey collects participation counts, as well as catch and effort data based on survey maps, boat logs, and interviews at boat ramps. The frequency of the boat-based collection process occurs over multiple times during a day, and multiple days in a week at the ramps and docks. In the interviews, the DFW staff ask fishermen if they released any fish and the state of disposition, as well as details such as the species, number and/or weight, and condition (live, dead/injured).

For logbooks, 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 BMUS or ECS in the EEZ around the CNMI must have a permit issued for use with that vessel. Bottomfish fishing vessels may also be required to carry an observer if directed by PIRO's Regional Administrator (50 CFR 665.407); however, to date placement of an observer has not occurred. Observer coverage could supplement bycatch data, but given the fishery characteristics and low bycatch statistics, observers have not been deployed and are not an identified SBRM in this fishery.

2.2.2.2 Whether the FEP explains how the SBRM is used to collect, record, and report bycatch data?

As with the bottomfish fishery in Guam, the Marianas FEP does not provide an explanation of how the SBRMs for the CNMI meet the purpose as described in the 2017 SBRM rule, because the Council's development of the 2002 Bottomfish FMP Amendment 6 (Supplement) and 2009 Marianas FEP preceded the 2017 SBRM rule. An amendment to the Marianas FEP is therefore needed to add an explanation of how the SBRMs meet the purpose as defined in the rule, and to identify the shore-based creel survey as another SBRM for the fishery. The explanation of how the SBRMs meet the purpose follows in this section, and the proposed amendment based on this review is described in section 3.2.

Evaluation of the Requirements for SBRM (§600.1610(a)(2)(i)-(iv)):

a) Bycatch characteristics (amount and type)

As described in the Marianas FEP (section 4.2.1.3), almost all fish species caught in the CNMI are considered food fishes, though the percent released as bycatch varies by species or family

from 2 percent for blueline snapper (*Lutjanus kasmira*) to 56 percent for red snapper (in this case, *L. bohar*, which is ciguatoxic). The information from the 2021 Marianas Annual SAFE Report demonstrated a zero percent bycatch collected 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.

As with the Guam bottomfish, there were no federal logbooks submitted to NMFS in the fishery in 2021, and few reports have been submitted since the program began in 2009. If the Council finds concerns regarding bycatch in the bottomfish fishery, it would make the appropriate recommendations to address the concerns. Bycatch data is updated in Annual SAFE reports.

b) Feasibility of cost, technical, and operational perspectives of the SBRM

The Marianas FEP does not discuss the feasibility of maintaining creel surveys, but the boat-based creel survey has been in place since 2000 and the shore-based survey has been in place since 2005. DFW conducts the fishery data collection in CNMI with support from PIFSC. The survey is conducted year-round, and covers fishing by persons engaged in subsistence, recreational, charter, and commercial fishing (WPRFMC 2009c). Detailed survey methodology is summarized in section 4.1.2.3 of the bycatch amendment (WPRFMC 2002).

The cost of collecting bycatch information is included in the cost of conducting creel surveys. The cost of the creel surveys is addressed through the Cooperative Agreement between CNMI DFW and USFWS-SRF, NOAA PIRO IFA funds, and NOAA PIFSC WPacFIN funds. The funding may fluctuate but base-funding has supported stable operations since 2000 for the boat-based survey and 2005 for the shore-based survey. In amending the Marianas FEP to include shore-based creel surveys as a SBRM, we expect the costs, operational, and technical aspects described above for the Guam shore-based creel surveys to be similar in this fishery. Because this methodology has been used to collect data continuously for over 15 years in this fishery, its continued historical use is indicative that the cost of the SBRM is feasible.

The creel survey is feasible from a technical and operational perspective for collecting bycatch information in the bottomfish fishery. It is conducted year-round and covers fishing by persons engaged in subsistence, recreational, charter, and commercial fishing (WPRFMC 2009a). DFW staff conduct interviews on scheduled survey days, and during the catch interviews, surveyors question the fishermen on whether they caught and released any fish and inquire about the species and the amount of fish released. The creel survey form 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 second component of the SBRM for this fishery, the federal logbooks, is funded entirely by NMFS. As recently as 2017 there were 25 permits issued. Since 2014, however, three or fewer people have reported and submitted logbooks, which means the data cannot be used (without aggregation) due to confidentiality restrictions. From a cost perspective, the logbooks have been in place for 20 years, and although not often submitted by fishermen, the costs to continue this SBRM are feasible.

From technical and operational standpoints, both the creel survey and federal logbooks collect and record bycatch data to enable the Council to evaluate the bycatch levels in this fishery. For the creel survey, the 2021 SAFE report (WPRFMC 2022c) indicates that, for the boat-based creel survey, the number of sample days has been fairly stable, but the number of regular survey interviews has fluctuated recently from 65 in 2019 to 205 in 2021. This trend is illustrated by comparing the average number of surveys over different periods. The 20-year average is 203 surveys per year, the 10-year average is 140, and the 5-year average is 128. 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 boat-based creel survey program in the CNMI has been operating continuously for over a decade and is a practicable methodology for collecting bycatch information the fishery. In terms of feasibility of costs, logbooks are inexpensive and funded by NMFS, and thus this methodology appears feasible. Operationally, logbooks provide information for bycatch by commercial bottomfish vessels and can be used in remote areas without expensive electronic equipment.

Other potential options to collect 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 like CNMI's. The small size of vessels in the fishery also makes the placement of observers difficult from an operational perspective. 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. For these reasons, such programs are not likely to be feasible in the fishery.

c) Uncertainty of data resulting from the SBRM

A standardized reporting methodology can be designed so that the uncertainty associated with bycatch data can be described quantitatively or qualitatively (50 CFR 600.1610(a)(2)(iii)). For the CNMI bottomfish fishery, uncertainty is not captured quantitatively because bycatch is estimated as a direct tally of discards and losses to predation. This tally or count is not mathematically expanded to provide total bycatch estimates for the fishery in a way that provides a statistical measure of uncertainty (e.g., a standard deviation or confidence interval), because the bycatch rate is extremely low and the Council has not identified this additional level of detail as a need. If expansion methodologies are developed in the future 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.

Qualitatively, factors that affect uncertainty of bycatch data are related to practical constraints of the creel survey. Since these surveys do not record data from all fishing trips, the accuracy of bycatch estimates is a function of sampling intensity (WPRFMC 2002). The majority, if not all, of the catch in the bottomfish fishery are kept (as a matter of cultural practice). Thus, bottomfish fishing trips with bycatch are rare and the chances of intercepting those trips are relatively small given the nature of the creel survey. Another factor that contributes to uncertainty is that surveyors do not observe bycatch directly, since it is not generally brought to port. Accuracy of bycatch data may therefore be limited by the memories of fishermen and the difficulties in accurately identifying fish, mammals, sea turtles, and seabirds to the species level. Fishermen may also avoid reporting bycatch and any protected species interaction in fear of federal

violations. The number of fish lost due to depredation may also be underestimated since the events occur at depth. There may also be an issue with consistency in asking about bycatch during the catch interview, as sometimes fishermen do not want to be delayed from delivering their fish to the market and getting paid. This can result in abbreviating the catch interview to the most pertinent questions and may result in incomplete interviews.

In the case of federal logbooks, uncertainties stem from the accuracy of reporting by permitted fishermen on the amount of discards. To date, 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.

While 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 (i.e., using selective gear that retains most fish species caught).

Overall, there are some uncertainties in bycatch data because not all trips are being accounted for and bycatch events are rare. However, considering that reported bycatch rates are low in the fishery, NMFS and the Council have not identified uncertainty as a substantial issue with current SBRM.

d) Data use in determining amount and type of bycatch

Creel survey data, including bycatch data collected by DFW are reported to NMFS PIFSC for storage in a database. The collected raw data are summarized and incorporated into the Annual SAFE reports by the Council's Plan Teams (e.g., WPRFMC 2022c). The Annual SAFE report summarizes the total number of fish released and percentage of catch released by year, based on the raw counts. These counts are not expanded to provide total bycatch estimates for the fishery, but still provide useful metrics for NMFS and the Council to identify potential bycatch concerns. Similarly, SAFE reports provide a summary of catch and bycatch data from federal logbooks. These reports include total reported catch and total bycatch reported on logs in numbers of fish when available based on federal confidentiality requirements. The Annual SAFE reports are reviewed by the Council and several advisory bodies, including the SSC, for additional comments and interpretation before being finalized by the regulatory deadline of June 30th of each calendar year. Completed SAFE reports are publically available for use through the Council's website.

The Council also conducts data workshops aimed at improving data collection systems in the region. Reports from the 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 PIFSC on data collection systems and methodological 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.

2.2.2.3 Whether the FEP provides guidance on how to adjust the implementation of the SBRM?

The Marianas FEP does not address how NMFS should adjust funding to these programs if there is a change in available funds, as decisions would be made based on factual considerations on a case-by-case basis. Generally, costs will be reviewed no less than every five years as is required by the 2017 SBRM rule. If funding is reduced, fisheries data collection is not likely to be eliminated, but may be reduced which could potentially increase uncertainty in bycatch estimates. The Council, the SSC, and NMFS may review any potential changes in consultation with local agency partners to assess and mitigate impacts to data quality and continuity.

Overall, given the fishery characteristics and known bycatch characteristics of this fishery, the creel survey and federal logbooks are appropriate SBRMs for this fishery. Since few logbooks have been submitted to NMFS and data cannot be used due to confidentiality restrictions, logbook data has yet to be used to assess bycatch. If the Council identifies potential bycatch concerns based on the SBRMs in this fishery, 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 Teams and Advisory Panels may also identify potential bycatch concerns based on local expert knowledge.

2.3 Hawaii Archipelago FEP

2.3.1 Bottomfish Fishery

NMFS and the Council have implemented gear restrictions as regulatory measures to reduce bycatch from destructive fishing methods. Specifically, fishing for bottomfish with bottom trawls and bottom set gillnets is prohibited, as is the possession or use of any poisons, explosives, or intoxicating substances for the purpose of harvesting bottomfish (51 FR 27413, August 27, 1986; WPRFMC 2002a).

Main Hawaiian Islands Bottomfish Fisheries

The State of Hawaii Department of Land and Natural Resources, Division of Aquatic Resources (DAR) manages the deep-sea bottomfish fishery in the main Hawaiian Islands (MHI) under a joint management arrangement with the 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 a “non-Deep 7” stock complex, but all species except uku were reclassified as ECS in 2019 (84 FR 2767, February 8, 2019). The primary gear used in the bottomfish fishery is a vertical handline, deployed from small boats. Uku are also caught by trolling.

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 Papahānaumokuākea 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 BMUS or ECS, or seamount groundfish MUS in the Hancock Seamounts Ecosystem Management Area is prohibited until the Regional Administrator determines the armorhead (*Pseudopentaceros wheeleri*) stock is rebuilt.

2.3.1.1 Whether the FEP identifies SBRM for these fisheries?

Based on the Council and NMFS coordinated review summarized below, the DAR commercial fish catch report, creel surveys, and federal logbooks identified as SBRM in the Hawaii Archipelago FEP (HI FEP) provide an appropriate means of collecting, recording, and reporting bycatch data, satisfying the recording and reporting requirements of the 2017 SBRM rule (WPFMC 2021). The SBRMs identified for the bottomfish fisheries meet 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 to the HI FEP is needed for the identification of SBRMs for these fisheries.

Main Hawaiian Islands

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 (HI FEP). The HI FEP identifies the DAR commercial fish catch report and the Hawaii Marine Recreational Fishing Survey (HMRFS) creel survey as the SBRM. The commercial fish catch report is required by the State commercial marine license (CML) and is a component of the Fishery Reporting System. The HI FEP also identifies a federal logbook, which was recommended by the Council for EEZ waters, as the SBRM. This recommendation was implemented as trip reports for non-commercial fishing for BMUS in Federal waters. Since the publication of the HI FEP in 2009, DAR's commercial fish reporting system was updated and the current status is described below.

Hawaii Commercial Fish Report

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 DAR one of several catch reporting forms. This requirement also applies to fish caught in federal waters, including the PRIAs, but landed in Hawaii. The data submitted by commercial fishermen to DAR are compiled and analyzed by DAR, which publishes the resulting reports annually.

For Deep 7 bottomfish, commercial fishermen are required to submit reports of fishing activity on a per trip basis. Fishing reports include information such as the area fished, fishing method, hours fished per method and/or area, number of fishing lines, port of landing, species, number of fish caught, pounds landed, and number of fish lost and released by species. These reports must be submitted 5 days after completion of the trip. For uku and all other commercial 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 DAR 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.

Hawaii Marine Recreational Fishing Survey

DAR has been working with NMFS since 2001 to collect non-commercial (recreational) fishing data through HMRFS. This program is funded by NMFS through the Marine Recreational Information Program (MRIP) and USFWS SFR program. It consists of two components, a mail survey to estimate fishing effort (Fishing Effort Survey) and field interviews with fishermen to survey catch during fishing trips (Access Point Angler Interview Survey). Data from these two components is combined to generate an estimate of catch. The mail surveys are sent 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 fishermen in Hawaii. To estimate the number of fish caught, DAR staff collect catch data through interviews with fishermen at various public fishing areas around the State. The DAR staff identify, measure, and weigh the fish that were caught and collect information about fish that were released (i.e., bycatch).

Federal Non-commercial Logbook

Federal regulations require the owner or operator of a vessel and any person who does not have a state commercial marine license to obtain a permit to fish non-commercially for BMUS or bottomfish ECS in the EEZ around the MHI. Regulations also require vessel operators or owners to submit a logbook to NOAA Fisheries within 72 hours after landing.

Observers

Bottomfish fishing vessels may also be required to carry an observer if directed by PIRO's Regional Administrator (50 CFR 665.207); however, to date, placement of an observer has not occurred. Observer coverage could supplement bycatch data, but given the fishery characteristics and low bycatch statistics, observers have not been deployed and are not an identified SBRM in this fishery.

Northwest Hawaiian Islands

Although the bottomfish fishery was closed in 2009, all of the fishery data collection methodologies previously identified as SBRM for the NWHI bottomfish fishery (i.e., DAR catch report, HMRFS creel survey, and federal logbook) are still available if the fishery should reopen. Under federal regulations, bottomfish fishing in the NWHI requires a permit, reporting, and is subject to observer coverage if so directed by the PIRO Regional Administrator (50 CFR

665.207). Reporting was done through a daily log form collected by DAR, and included the number of fish released, the number damaged, and the number “stolen.” The latter two generally refers to fish damaged by or lost to predators such as sharks. The seamount groundfish fishery at Hancock Seamounts has been closed since 1986 and will remain closed until the overfished stock of armorhead is rebuilt. There has never been a U.S. fishery targeting this species, but it is overfished due to exploitation by foreign vessels (75 FR 69015, November 10, 2010). The Council and NMFS will identify an SBRM if the fishery should reopen.

2.3.1.2 Whether the FEP explains how the SBRM is used to collect, record, and report bycatch data?

The HI FEP does not provide an explanation of how the SBRMs meet the purpose as described in the 2017 SBRM rule, because the Council’s development of the 2002 Bottomfish FMP Amendment 6 (Supplement) and 2009 HI FEP preceded the 2017 SBRM rule. An amendment to the HI FEP is therefore needed to add an explanation of how the SBRMs meet the purpose as defined in the rule. The explanation of how the SBRMs meet the purpose follows in this section, and the proposed amendment based on this review is described in section 3.3.

Evaluation of the Requirements for SBRM (§600.1610(a)(2)(i)-(iv)):

a) Bycatch characteristics (amount and type of bycatch)

Main Hawaiian Islands

Only a small number of non-commercial bottomfish fishing reports have been received by NMFS, so the majority of bycatch data derives from commercial catch reports. These reports show that bycatch in the fishery is low, generally less than 2 percent (WPRFMC 2022b). Communications with fishermen indicate that they know species’ depth distributions and feeding habits, which assists in targeting desirable species and preventing bycatch. The fishery also uses selective hook and line gear. Kahala (*Seriola dumerili*) and butaguchi (*Pseudocaranx dentex*) are two non-target species that might be discarded as bycatch due to presence of parasitic worms or ciguatoxins (WPRFMC 2009b). Potential bycatch in a form of regulatory discards can also occur when a non-commercial fisherman exceeds the five “deep 7” bottomfish per day bag limit, or if a commercial fisherman catches an opakapaka or onaga that is below the one-pound State minimum size limit for sale. Alternatively, those fishermen may retain those fish for personal use. Fishermen have also reported losses to shark predation that are described in State commercial fish reports.

Northwest Hawaiian Islands

Though the fishery in the NWHI is not active, the HI FEP provides 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 and butaguchi, made up the majority of bycatch. Only 5 percent of kahala was retained, and 50–70 percent of butaguchi was retained. These and other carangid species were generally discarded due to poor marketability because of ciguatera concerns.

b) Feasibility of cost, technical, and operational perspectives of the SBRM

Main Hawaiian Islands

The HI FEP does not discuss the feasibility of the cost to operate and maintain SBRM, but the commercial fishing report is the largest and oldest dataset that DAR has, and it has been collected and processed continuously since 1948. The HMRFS program has been in place since 2003, and the federal non-commercial bottomfish report has been in place since 2008. These programs provide appropriate SBRM from cost, technical, and operational perspectives.

From a cost perspective, the continued operation of the commercial fish report is dependent upon DAR's continued funding of the commercial reporting program; however, this program has a long history and is expected to continue. The commercial fishing report is funded through the fees collected from the Commercial Fishing License and a local budget line item from the State of Hawaii. NMFS has also provided funds to support "near real time" commercial catch monitoring for the Deep 7 bottomfish fishery. The HMRFS program is supported by the SFR program run by the USFWS, which requires matching state funds. HMRFS is also partly funded by NMFS MRIP and currently is undergoing certification which would provide a steady funding stream. Also, the State passed a bill in 2021 establishing a visitor recreational fishing license that would generate fees to support the non-commercial data collection. DAR has the lead role for operations and implementation of the Commercial Fishing License and HMRFS programs, and coordinates with PIFSC WPacFIN as necessary. NMFS administers the federal logbook reporting for non-commercial bottomfish fishing, which is funded along with other federal reporting operations and is stable. The cost of collecting bycatch information is included in the cost of conducting the three fishery data collection programs.

Because the SBRM for the MHI bottomfish fishery have been used to collect data continuously for many years, it is indicative that the cost of the SBRMs is feasible for collecting bycatch information from technical and operational perspectives. The programs employ online and paper submission as appropriate, are conducted year-round, and collectively provide bycatch data from persons engaged in subsistence, recreational, charter, and commercial fishing. NMFS and the Council have not identified other technical or operational issues with these long-standing data collection and reporting programs.

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 such as the MHI bottomfish fishery. The small size of vessels in the fishery also makes the placement of observers difficult from an operational standpoint. 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 SBRM for the fishery.

Northwest Hawaiian Islands

The paper logbook program was run continuously for the NWHI bottomfish fishery while it was in operation, and like the commercial fish report used in the MHI, provided a feasible method to collect and report catch and bycatch data in the fishery as demonstrated by its consistent

implementation. Some of the vessels in the NWHI bottomfish fishery were large enough to accommodate an observer, and these programs were run intermittently from 1981-82 by NMFS, 1990-93 by DAR, and 2003-05 by NMFS. The duration of the operation of these SBRMs establishes they are feasible from a cost perspective. If the fishery reopened and the NMFS Regional Administrator identified a need for observers, NMFS would have to identify funding to support this program. Based on past history, the logbook program offers a feasible program for continuous data collection, and may be supplemented as needed by an observer program.

c) Uncertainty of data resulting from the SBRM

Generally, a standardized reporting methodology can be designed so that the uncertainty associated with bycatch data can be described quantitatively or qualitatively (50 CFR 600.1610(a)(2)(iii)). For Hawaii bottomfish fisheries, uncertainty is not captured quantitatively because bycatch from logbooks and commercial fisheries reports is a direct tally of discards and losses to predation. This tally or count is based on a census of fishing activity, and is not mathematically expanded to provide total bycatch estimates for the fishery in a way that provides a statistical measure of uncertainty (e.g., a standard deviation or confidence interval). Expansions of survey data from HMRFS could include a quantitative uncertainty for that data stream (percentage standard error), but this has not been done because the bycatch rate is low and the Council has not identified this additional level of detail as a need.

Qualitatively, factors that affect uncertainty of bycatch data are related to practical constraints of the HMRFS survey and participation in logbook and commercial fish report programs. Since HMRFS surveys do not record data from all fishing trips, the accuracy of bycatch estimates is a function of sampling intensity (WPRFMC 2002). For the HMRFS 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 utility of this data would be improved if NMFS and the MRIP developed an algorithm to expand the “thrown back” disposition code data and provide that information by species for analysis. Another factor that contributes to uncertainty is that surveyors do not observe bycatch directly, since it is not generally brought to port. There may also be an issue with consistency in asking about bycatch during the catch interview, as sometimes fishermen do not want to be delayed. This can result in abbreviating the catch interview to the most pertinent questions and may result in incomplete interviews.

For Commercial Fish Reports, some qualitative 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, non-commercial reports are due within three days, and for the uku fishery, reporting is delayed up to one month. These delays may result in some recall uncertainty in remembering how many pieces of each species were caught and returned to the water.

For commercial reports and creel surveys, accuracy of bycatch data may be limited by the memories of fishermen and the difficulties in accurately identifying fish, mammals, sea turtles, and seabirds to the species level. Fishermen may also avoid reporting bycatch and any protected species interaction in fear of federal violations. The number of fish lost due to depredation may also be underestimated since the events occur at depth.

While 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 (i.e., using selective gear that retains most fish species caught).

Overall, there are some uncertainties in bycatch data for Hawaii bottomfish fisheries because not all trips are being accounted for and imperfect recall of bycatch events. However, considering that reported bycatch rates are relatively low in the fisheries (WPFMC 2022b), NMFS and the Council have not identified uncertainty as a substantial issue with current SBRM.

d) Data use in determining amount and type of bycatch

The Hawaii Archipelagic SAFE reports include summaries of bycatch data for the bottomfish fishery based on State commercial fish reports. Data from non-commercial logbooks would be reported based on availability and confidentiality considerations. The Annual SAFE reports are reviewed by the Council and several advisory bodies including the SSC for additional comments and interpretation before being finalized by the regulatory deadline of June 30th of each calendar year. Completed SAFE reports are publically available for use through the Council's website. Formal analyses are not regularly done on the 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, and if concerns are raised at SSC or Council meetings.

The Council also conducts data workshops aimed at improving data collection systems in the region. Reports from these workshops provide information on data collection systems to the Council and SSC. The SSC regularly discusses and provides advice to the Council and the PIFSC on data collection systems and methodological 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.

Given the scale of the bottomfish fishery in Hawaii and low level of bycatch, the current data collection methodologies provide appropriate SBRMs. 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 SSC, Plan Teams and Advisory Panels may also identify potential bycatch concerns based on local expert knowledge, as well as other methods that would improve methods to collect, record, and report data.

2.3.1.3 Whether the FEP provides guidance on how to adjust implementation of the SBRM?

The HI FEP does not address how NMFS should adjust funding to these programs if there is a change in available funds, as decisions would be made based on factual considerations on a case-by-case basis. Generally, costs will be reviewed no less than every five years as required by the 2017 SBRM rule. If funding is reduced, fisheries data collection is not likely to be eliminated, but may be reduced which could potentially increase uncertainty in bycatch estimates. The Council, the SSC, NMFS and local agency partners may review any potential changes to assess and mitigate impacts to data quality and continuity.

Overall, given the fishery characteristics and known bycatch characteristics of these fisheries, the identified SBRM are appropriate for this fishery. If the Council identifies potential bycatch concerns based on the SBRMs in this fishery, 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 Teams and Advisory Panels may also identify potential bycatch concerns based on local expert knowledge.

2.3.2 Crustacean Fisheries

There are two fisheries for crustacean MUS (CMUS) 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. The Kona crab fishery primarily occurs on Penguin Bank, although landings occur across the MHI. Kona crab are fished using hoop or loop nets, which are metal rings approximately one meter in diameter with net stretched across the ring. Several rings are strung together and deployed so they lie flat on the bottom in sandy habitats. Crabs crawl onto the baited nets and become entangled. Deepwater shrimp are harvested on outer reef slopes and deepwater banks at depths of 200-1200 meters using baited traps.

There is no federal permit, nor any state or federal reporting requirements for recreational fishery participants in the Kona crab fishery. A federal permit is required by the owner of a U.S. fishing vessel used to harvest 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 2021, there were fewer than three federal permits for the MHI shrimp fishery and 17 licensees reporting catch in the Kona crab fishery through DAR commercial fish reports. Fishermen harvested 3,822 lb of Kona crab in 2021 (WPRFMC 2022b). Due to data confidentiality requirements (i.e., less than three vessels to aggregate data), their catch data cannot be reported for the 2021 harvest of shrimp. The NWHI portion of the fishery remains inactive, although SBRMs are identified and described for the entire fishery.

2.3.2.1 Whether the FEP identifies SBRM for these fisheries?

Based on the Council and NMFS coordinated review summarized below, the DAR commercial fish catch report, creel surveys, and federal logbooks identified as SBRM in the HI FEP provide an appropriate means of collecting, recording, and reporting bycatch data, satisfying the recording and reporting requirements of the 2017 SBRM rule (WPFMC 2021). The SBRMs identified for the crustacean fisheries meet 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 to the HI FEP is needed for the identification of SBRMs for these fisheries.

The Council established SBRM for the Hawaii crustacean fisheries in the 1998 Crustaceans FMP Amendment 10, which was carried forward in the 2009 HI FEP. These amendments identified the SBRM as the DAR commercial fish catch report and creel surveys for all waters, and federal logbooks for deepwater shrimp caught in the EEZ. Commercial fish reports and the HMRFS program are described in detail above in Section 2.3.1. HMRFS does not currently collect data

on Kona crab or other invertebrates, although that may be collected in the future as part of the MRIP certification process.

Vessels may also be required to carry an observer if directed by PIRO's Regional Administrator (50 CFR 665.247); however, to date placement of an observer has not occurred. Observer coverage could supplement bycatch data, but given the fishery characteristics and low bycatch statistics, observers have not been deployed and are not an identified SBRM in this fishery.

2.3.2.2 Whether the FEP explains how the SBRM is used to collect, record, report bycatch data?

The HI FEP does not provide an explanation of how the SBRMs meet the purpose as described in the 2017 SBRM rule, because the Council's development of the 2002 Crustacean FMP Amendment 6 (Supplement) and 2009 HI FEP preceded the 2017 SBRM rule. An amendment to the HI FEP is therefore needed to add an explanation of how the current SBRMs meet the purpose as defined in the rule. The explanation of how the SBRMs meet the purpose follows in this section, and the proposed amendment based on this review is described in section 3.3.

Evaluation of the Requirements for SBRM (§600.1610(a)(2)(i)-(iv)):

a) Bycatch characteristics (amount and type of bycatch)

The Kona crab fishery is a targeted fishery that only harvests Kona crabs in loop nets that lie on the sand and do not catch other species that would be discarded. However, DAR regulations require the return of female Kona crab as well as a minimum size of 4 inches carapace length for any Kona crab so regulatory discards of Kona crabs do occur, primarily all female Kona crabs and undersized males. Wiley and Pardee (2018) found that up to 80 percent of captured Kona crabs had to be released under state regulations. They also reported that depredation is common while crabs are on the loop nets.

There was no information on the bycatch associated with the deepwater shrimp fishery at the time the Crustacean bycatch amendment or 2009 HI FEP were developed. The 2021 SAFE report includes information on discards for the crustacean fisheries. Bycatch from CMUS fisheries (Kona crab and deepwater shrimp) were reported separately. Regulatory discards in the Kona crab fishery are quite high (87%), but as of 2022 DAR is considering removing the requirement to release all female Kona crabs (WPFMC 2022b), which would substantially reduce bycatch from regulatory discards in this fishery. The amount of non-target species in the deepwater shrimp fishery could not be reported due to fewer than three licensees reporting. Regulatory releases and other bycatch are believed to be infrequent in the deepwater shrimp fishery because there are not size or sex-based restrictions (WPFMC 2022b).

b) Feasibility of cost, technical, and operational perspectives of the SBRM

The HI FEP does not explicitly discuss the feasibility of maintaining SBRM for these fisheries. The feasibility of the DAR commercial fish report program is discussed in the section on the MHI bottomfish fishery (2.3.1), and the situation is similar for crustaceans except that the crustacean commercial reporting is on a monthly level. The program is stable, and the long history of implementation indicates that it is feasible. The federal crustacean catch report is also

supported along with other federal reporting programs, has been in place for several years, which indicates that it is feasible. For noncommercial fisheries, HMRFS has not collected data on crustaceans recently. PIFSC and/or DAR would incur marginal costs if data collection and analysis of crustaceans were resumed.

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 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 SBRM for the fishery.

c) Uncertainty of data resulting from the SBRM

Generally, a standardized reporting methodology can be designed so that the uncertainty associated with bycatch data can be described quantitatively or qualitatively (50 CFR 600.1610(a)(2)(iii)). For commercial crustacean fisheries, bycatch is based on a direct tally or count, which is a census of commercial fishing activity that does not have a quantified statistical uncertainty. Bycatch characteristics of the non-commercial Kona crab fishery are unknown because it is not sampled by HMRFS. Expansions of survey data from HMRFS could include a quantitative uncertainty for that data stream (percentage standard error) if surveys are changed to include invertebrates in the future.

Commercially, uncertainty comes with self-reporting data and the delay in which reporting occurs. Commercial fish reports to DAR are filed monthly, so there may be some recall uncertainty with fishermen 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 the 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 may not be reported, presenting a source of uncertainty in bycatch and total mortality estimates.

d) Data use in determining amount and type of bycatch

Identified SBRM provide data on the species and quantity that are discarded in the MHI crustacean fisheries. The Council, through the Archipelagic Plan Team, summarizes the catch, number of participants, number of licenses that reported, and the number of trips and report this information in the Hawaii Annual SAFE report. SAFE reports are reviewed by the Council and several advisory bodies including the SSC for additional comments and interpretation before being finalized by the regulatory deadline of June 30th of each calendar year. Completed SAFE reports are publically available for use through the Council's website. Hawaii SAFE reports prior to 2020 did not include summaries of these data, but the 2020 and later SAFE reports 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 the development of appropriate bycatch mitigation measures. Council advisory bodies such as Plan Teams and Advisory Panels may also identify potential bycatch concerns based on local expert knowledge.

2.3.2.3 Whether the FEP provides guidance on how to adjust implementation of the SBRM?

The HI FEP does not address how NMFS should adjust funding to these programs if there is a change in available funds, as decisions would be made based on factual considerations on a case-by-case basis. Generally, costs will be reviewed no less than every five years as is required by the 2017 SBRM rule. If funding is reduced, fisheries data collection is not likely to be eliminated, but may be reduced which could potentially increase uncertainty in bycatch estimates. The Council, the SSC, and NMFS may review any potential changes in consultation with local agency partners to assess and mitigate impacts to data quality and continuity.

Overall, given the fishery characteristics and known bycatch characteristics of these fisheries, the identified SBRM are appropriate for this fishery. If the Council identifies potential bycatch concerns based on the SBRMs in this fishery, 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 Teams and Advisory Panels may also identify potential bycatch concerns based on local expert knowledge.

2.3.3 Precious Coral Fishery

Hawaii's precious coral fishery is comprised of pink coral (*Pleurocorallium secundum*), red coral (*Hemicorallium laauense*), gold coral (*Kulamanamana haumea*), bamboo coral (*Acanella spp.*), and three black corals (*Antipathes griggi*, *A. grandis*, and *Myriopathes ulex*) all of which are MUS (precious corals in other FEPs were reclassified as ECS). Only selective gear may be used, including submersibles and hand harvest. Due to the high cost of operation for submersibles and the high safety risk associated with deepwater diving, the fishery is purely commercial. There are no publicly available data for the precious coral fishery since 2007 because participation in this fishery has declined, and the number of permit holders since 2007 has been fewer than the minimum of three required to protect confidential data. The NWHI portion of this fishery is inactive due to the establishment of the Papahānaumokuākea Marine National Monument. There is also a moratorium on the harvest of gold corals due to its slow growth.

2.3.3.1 Whether the FEP identifies SBRM for this fishery?

Based on the Council and NMFS coordinated review summarized below, the DAR commercial fish catch report, and federal logbooks identified as SBRM in the HI FEP provide an appropriate means of collecting, recording, and reporting bycatch data, satisfying the recording and reporting requirements of the 2017 SBRM rule (WPFMC 2021). The SBRMs identified for the precious coral fisheries meet 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 to the HI FEP is needed for the identification of SBRMs for these fisheries.

The Council established SBRM for the Hawaii precious coral fisheries in 1998 through Amendment 4 to the Precious Corals FMP, which was carried forward in the 2009 Hawaii FEP. The HI FEP identifies two data sources for bycatch reporting: 1) the State of Hawaii DAR commercial fish catch report required by the State CML (see Section 2.3.1), and 2) federal logbooks.

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. DAR also requires a commercial marine license and commercial fishing report for the harvest of precious corals.

Pursuant to the ESA, NMFS may require fishing vessels in fisheries identified through an annual determination process to carry Federal observers (72 FR 43176, August 3, 2007). However, given the fishery characteristics and low bycatch statistics, observers have not been deployed and are not an identified SBRM in this fishery.

2.3.2.2 Whether the FEP explains how the SBRM is used to collect, record, and report bycatch data?

As with the bottomfish and the crustacean fisheries, the HI FEP does not provide an explanation of how the SBRMs meet the purpose as described in the 2017 SBRM rule, because the Council's development of the 2002 Precious Coral FMP Amendment 6 (Supplement) and 2009 HI FEP preceded the 2017 SBRM rule. An amendment to the HI FEP is therefore needed to add an explanation of how the SBRMs meet the purpose as defined in the rule. The explanation of how the SBRMs meet the purpose follows in this section, and the proposed amendment based on this review is described in section **Error! Reference source not found..**

Evaluation of the Requirements for SBRM (§600.1610(a)(2)(i)-(iv)):

a) Bycatch characteristics (amount and type of bycatch)

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

b) Feasibility of cost, technical, and operational perspectives of the SBRM

The HI FEP does not explicitly discuss the feasibility of maintaining SBRM for this fishery. The feasibility of the DAR commercial fish reporting program is discussed in the section on the MHI bottomfish fishery (Section 2.3.1), and the situation is similar for precious corals except that the precious coral commercial reporting is on a monthly level. The program is stable, and the long history of implementation indicates that it is feasible. The federal logbook report is supported

along with other federal reporting programs, has been in place for several years, which indicates that it is feasible.

c) Uncertainty of data resulting from the SBRM

Uncertainty in the data would be similar to uncertainties in other logbook data from fisheries that use 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.

d) Data use in determining amount and type of bycatch

If there is any bycatch, the data from DAR 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.

2.3.2.3 Whether the FEP provides guidance on how to adjust implementation of the SBRM?

The HI FEP does not address how NMFS should adjust funding to these programs if there is a change in available funds, as decisions would be made based on factual considerations on a case-by-case basis. Generally, costs will be reviewed no less than every five years as is required by the 2017 SBRM rule. If funding is reduced, fisheries data collection is not likely to be eliminated, but may be reduced which could potentially increase uncertainty in bycatch estimates. The Council, the SSC, and NMFS may review any potential changes in consultation with local agency partners to assess and mitigate impacts to data quality and continuity.

Overall, given the fishery characteristics and known bycatch characteristics of this fishery, the identified SBRM are appropriate for this fishery. If the Council identifies potential bycatch concerns based on the SBRMs in this fishery, 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 Teams and Advisory Panels may also identify potential bycatch concerns based on local expert knowledge.

2.4 Pacific Remote Island Areas FEP

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

SBRM of all the PRIA non-pelagic fisheries - bottomfish, precious corals, coral reef, and crustacean fisheries - are addressed in a single, combined section because the establishment of the Pacific Remote Islands Marine National Monument (PRIMNM) generally prohibits the commercial harvest in these fisheries and the amount of non-commercial fishing is negligible due to the remote location of the PRIA. The PRIMNM extends to the 200 nm limit of the EEZ around Wake Island, Jarvis Island, and Johnston Atoll (Figure 1). The PRIMNM is bounded by rectangles 50 nm from shore around Howland and Baker Islands, Kingman Reef, and Palmyra Atoll; commercial fishing is allowed outside this boundary. However, non-commercial fishing is also allowed within the PRIMNM provided that a non-commercial or a PRI recreational charter permit is secured from NMFS. Permit holders must maintain onboard the vessel an accurate and

complete record of catch, effort, and other data on paper report forms provided by the Regional Administrator, or electronically as specified and approved by the Regional Administrator.

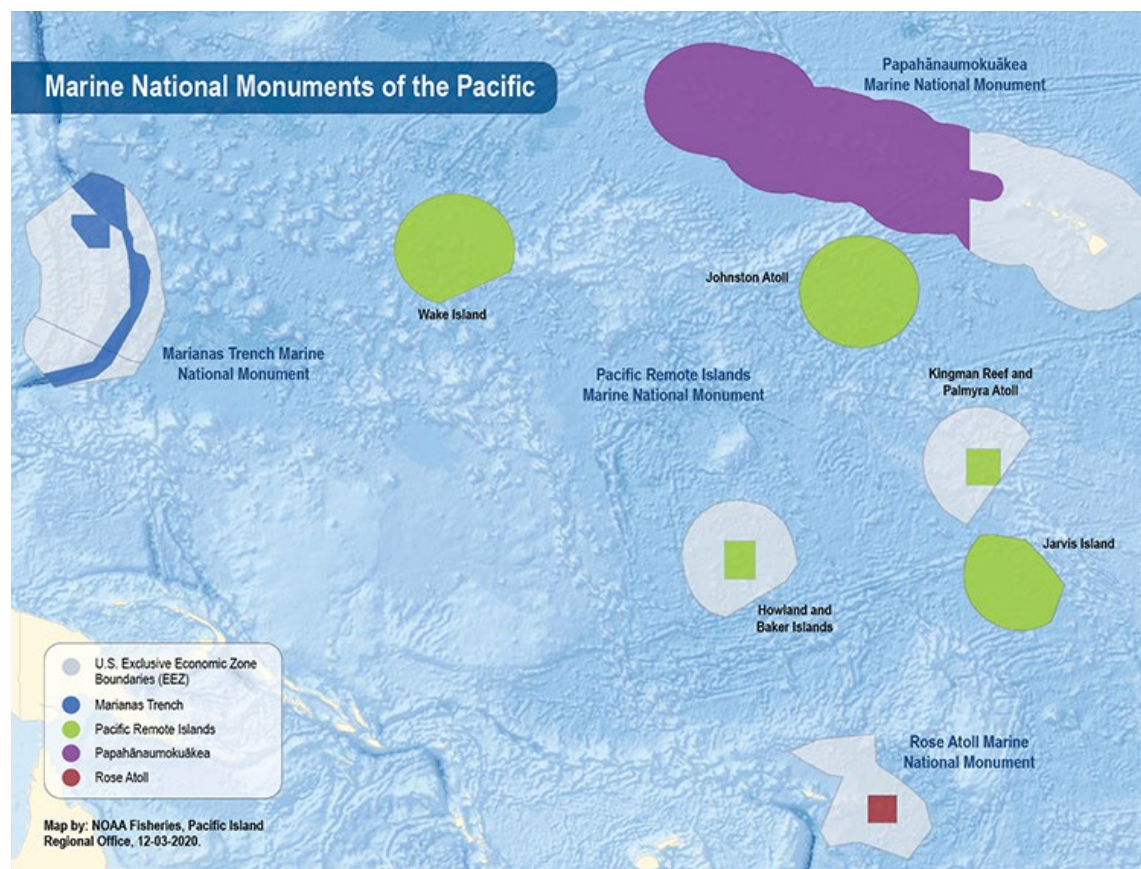


Figure 1: Map of the marine national monuments in the Pacific Islands Region

The Pacific Remote Island Areas FEP (PRIA FEP) addresses fishery management around Wake Island, Johnston Atoll, Howland Island, Baker Island, Kingman Reef, Palmyra Atoll, and Jarvis Island.

Bottomfish Fisheries

All bottomfish habitat located in the PRIA falls within the boundaries of the PRIMNM, effectively prohibiting commercial bottomfish fishing in the PRIA. There is a permit and reporting requirement in the PRIA for bottomfish fishing that would apply only to non-commercial and charter fishing. The logbook is identified as SBRM in the PRIA FEP (WPFMC 2009) and is the methodology in which bycatch would be reported if non-commercial bottomfish fishing occurs in the PRIA. NMFS has issued six or less permits annually since the program began in 2006, but no fishing has been reported.

NMFS and the Council have implemented gear restrictions as regulatory measures to reduce bycatch from destructive fishing methods. Specifically, fishing for bottomfish with bottom trawls and bottom set gillnets is prohibited, as is the possession or use of any poisons, explosives, or

intoxicating substances for the purpose of harvesting bottomfish (51 FR 27413, August 27, 1986; WPRFMC 2002a).

Vessels may also be required to carry an observer if directed by PIRO's Regional Administrator (50 CFR 665.606); however, to date placement of an observer has not occurred. Observer coverage could supplement bycatch data, but given low fishery participation, fishery characteristics, and likely low bycatch rates, observers have not been deployed and are not an identified SBRM in this fishery.

Precious Coral Fisheries

To reduce the potential for bycatch, only selective gear can be used to harvest precious corals in the PRIA. A vessel used to harvest or land black, bamboo, pink, red, or gold corals in the PRIA must be registered to a valid Western Pacific precious coral permit issued for the precious coral bed where they are fishing. However, no federal permits have been issued to harvest precious corals in the PRIA EEZ since permits were established by Amendment 1 to the Precious Coral FMP in 1988. There are no known extensive precious coral beds or harvests of precious corals in the PRIA, and much of the waters are excluded from commercial harvest due to the PRIMNM's prohibitions on commercial fishing. Fishing for precious corals for recreational purposes is highly unlikely because of the cost and logistical challenges with reaching the PRIA and harvesting corals that occur beyond normal recreational diving depths. Precious coral harvesting is highly selective, and thus does not have bycatch associated with it, as demonstrated by the Hawaii precious coral fishery (see Section 2.3.3). The federal logbook is identified as SBRM in the PRIA FEP (WPFMC 2009) and is the methodology in which bycatch would be reported if precious coral harvest occurs in the PRIA.

Pursuant to the ESA, NMFS may require fishing vessels in fisheries identified through an annual determination process to carry Federal observers (72 FR 43176, August 3, 2007). However, given the lack of participation in the fishery, and expected fishery characteristics with negligible bycatch, observers have not been deployed and are not an identified SBRM in this 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, U.S. Air Force, pers. comm., May 27, 2021). There is no information available for coral reef catches at Wake Island, which houses military installations and research facilities. The number of inhabitants at Wake are low (130 people; P.D. Brown, U.S. Air Force, pers. comm., May 27, 2021), and therefore the potential impacts of a subsistence fishery is likely negligible. Commercial coral reef fisheries are effectively 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. The logbook is identified as SBRM in the PRIA FEP (WPFMC 2009) and is the methodology in which bycatch would be reported if coral reef fishing occurs in the PRIA.

There are gear restrictions in place to protect habitat and reduce bycatch, including prohibitions on explosives, poisons, or intoxicating substances (50 CFR 665.227).

Pursuant to the ESA, NMFS may require fishing vessels in fisheries identified through an annual determination process to carry Federal observers (72 FR 43176, August 3, 2007). However, given the lack of participation in the fishery, and expected fishery characteristics with negligible bycatch, observers have not been deployed and are not an identified SBRM in this fishery.

Crustacean Fisheries.

A vessel used to fish for lobster or deepwater shrimp in the EEZ around the Pacific Remote Islands Areas must be registered to a valid Western Pacific crustacean permit. The most recent attempt at a crustacean fishery in the PRIA was at Palmyra in 1999 for lobster and deepwater shrimp. NMFS last issued a shrimp permit in 2010, but no catch was reported. All habitat for lobster and Kona crab fall within the boundaries of the PRIMNM, thus commercial fishing for those species is effectively prohibited by the PRIMNM's prohibitions and there are currently no crustacean fisheries operating in the PRIA. Fishing for crustaceans for recreational purposes is highly unlikely given the costs and logistical challenges associated with reaching the PRIA. In addition to the Western Pacific Crustaceans Permit, logbook reporting is required for vessels targeting lobsters and deepwater shrimp in the PRIA, and observers could be required by NMFS. The logbook is identified as SBRM in the PRIA FEP (WPFMC 2009) and is the methodology in which bycatch would be reported if crustacean fishing occurs in the PRIA.

There are gear restrictions in place to protect habitat and reduce bycatch, including prohibitions on use of gear other than trap, hand harvest, and hoop net to harvest CMUS.

Vessels may also be required to carry an observer if directed by PIRO's Regional Administrator (50 CFR 665.645); however, to date placement of an observer has not occurred. Observer coverage could supplement bycatch data, but given low fishery participation, fishery characteristics, and likely low bycatch rates, observers have not been deployed and are not an identified SBRM in this fishery.

2.4.1.1 Whether the FEP identifies SBRM for these fisheries?

Based on the Council and NMFS coordinated review summarized below, the SBRM identified in the PRIA FEP provide appropriate means of collecting, recording, and reporting bycatch data, satisfying the recording and reporting requirements of the 2017 SBRM rule (WPFMC 2021). The identified SBRMs meet 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 to the PRIA FEP is needed for the identification of SBRMs.

The 2009 PRIA FEP identifies federal logbooks as SBRMs for the bottomfish, coral reef ecosystem, precious coral, and crustacean fisheries in the PRIAs. The PRIA FEP requires fishermen to obtain a federal permit to fish for certain MUS in federal waters and to report all catch and discards. The operator of a fishing vessel must maintain on board the vessel an accurate and complete record of catch, effort, and other data on paper report forms provided by the Regional Administrator, or electronically as specified and approved by the Regional

Administrator. If the logbook information was not submitted to NMFS electronically within 24 hours of the end of each fishing day while the vessel was at sea, the original logbook information for each day of fishing must be submitted to the Regional Administrator within 30 days of the end of each fishing trip. 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 also be available for determining bycatch in the fisheries.

2.4.1.2 Whether the FEP explains how the SBRM is used to collect, record, and report bycatch data?

The PRIA FEP does not provide an explanation of how the SBRMs meet the purpose as described in the 2017 SBRM rule, because the Council's development of the 2002 Bottomfish FMP Amendment 6 (Supplement) and 2009 HI FEP preceded the 2017 SBRM rule. An amendment to the HI FEP is therefore needed to add an explanation of how the SBRMs meet the purpose as defined in the rule. The explanation of how the SBRMs meet the purpose follows in this section, and the proposed amendment based on this review is described in section 3.4.

Evaluation of the Requirements for SBRM (§600.1610(a)(2)(i)-(iv)):

a) Bycatch characteristics (amount and type of bycatch)

There are no current commercial precious coral, coral reef, or crustacean fisheries operating in the PRIA due to the prohibition on commercial fishing in the PRIMNM, and the remoteness of the islands has led to little participation in non-commercial fishing. Since 2006 NMFS has issued six or fewer permits annually for fishing in the PRIA but has not received any reports of catch or bycatch. In 2021, no bottomfish permits were issued (WPFMC 2022x), so there is no data on either the amount or type of bycatch. Data from bottomfish, precious coral, crustacean, and coral reef ecosystem fisheries in the MHI indicate that these fisheries result in low levels of bycatch, and similar bycatch rates would be expected should any fishing occur in the PRIA where there are gear restrictions that limit harvest methods to those that are selective (e.g., hook and line, hand harvest; prohibitions on explosives). Considering there is no commercial fishing and a minimal amount of subsistence fishing by the few temporary residents, bycatch is expected to have a negligible effect on the fishing mortality of MUS stocks or ecosystems in the PRIA. Federal permits and logbooks are required should fishing occur and the logbooks would provide bycatch information. 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 Section 2.5).

b) Feasibility of cost, technical, and operational perspectives of the SBRM

Federal permits and reporting are required for fisheries in the PRIA. The PRIA FEP does not explicitly discuss the feasibility of maintaining SBRM for this fishery. However, federal logbook reports are funded internally by NMFS along with other federal reporting programs, and has been in place for over a decade (i.e., prior to the creation of the PRIA FEP in 2009). Given the

low number of participants in the fisheries, the continuation of federal logbooks is not expected to be cost prohibitive.

c) Uncertainty of data resulting from the SBRM

Uncertainty in the data would be similar to uncertainties in other fisheries that use self-reporting. Bycatch data would be reported as direct counts in Annual SAFE reports, and would not include a quantitative, statistical measure of uncertainty. Qualitative uncertainty could arise because fishermen may also avoid reporting bycatch or a protected species interaction in fear of federal violations. The number of fish lost due to depredation may also be underestimated since the events occur at depth, and memory recall error with filling out fishing reports may result in reporting of inaccurate or incomplete data. However, the nature of these uncertainties is not expected to affect management or bycatch data of the fisheries due to the low volume of fishing.

d) Data use in determining amount and type of bycatch

The data on the number of bycatch released by species contained in the logbooks provide the necessary type and quantify the amount of bycatch occurring in these fisheries to sustainably manage them. Data collected by the logbooks are summarized in the PRIA Annual SAFE reports. If the Council identifies a bycatch concern in the future based on the existing SBRMs or other sources of data, the Council may take action in the future to recommend additional data collection methodologies.

2.4.2.3 Whether the FEP provides guidance on how to adjust implementation of the SBRM?

The PRIA FEP does not address how NMFS should adjust funding to these programs if there is a change in available funds, as decisions would be made based on factual considerations on a case-by-case basis. Generally, costs will be reviewed no less than every five years as is required by the 2017 SBRM rule. If funding is reduced, fisheries data collection is not likely to be eliminated, but may be reduced which could potentially increase uncertainty in bycatch estimates. The Council, the SSC, and NMFS may review any potential changes in consultation with local agency partners to assess and mitigate impacts to data quality and continuity.

Overall, given the fishery characteristics and known bycatch characteristics of these fisheries, the identified SBRM are appropriate for this fishery. If the Council identifies potential bycatch concerns based on the SBRMs in this fishery, 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 Teams and Advisory Panels may also identify potential bycatch concerns based on local expert knowledge.

2.5 Pacific Pelagic FEP

Longline Fisheries

Any vessel fishing with longline gear throughout the entire range of the Pelagic MUS (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 U.S. 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. U.S. vessels transshipping longline-caught fish must also keep a transshipment log. All fishing vessels with a pelagic permit must carry an on-board observer, a federally trained biological technician that collects catch and effort information, when directed to do so by NMFS. The federal logbooks and observer coverage both collect data on bycatch.

2.5.1 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. The fishery is separated into trips targeting tuna (deep-set) and trips targeting swordfish (shallow-set), with each fishery using specific fishing gear and techniques. Deep-set and shallow-set landings in 2021 were just over 28 million pounds combined, with about 86 percent attributed to the deep-set. Landings are predominantly bigeye (*Thunnus obesus*) and yellowfin tuna (*Thunnus albacares*), as well as swordfish (*Xiphias gladius*), blue (*Makaira nigricans*) and striped marlin (*Kajikia audax*), spearfish (*Tetrapturus angustirostris*), moonfish (*Lampris* spp.), and wahoo (*Acanthocybium solandri*).

The American Samoa deep-set longline fishery estimated annual pelagic landings have varied from 2.0 to 9.7 million pounds from 2012 to 2021 (WPRFMC 2022e). The 2021 landings were approximately 2.3 million pounds, a continuation of the decline from 9.7 million pounds in 2012. Pelagic landings consist primarily of albacore (*Thunnus alalunga*), yellowfin, skipjack (*Katsuwonus pelamis*), and bigeye tuna. Wahoo, blue marlin, and swordfish are also landed. There were 11 vessels fishing in American Samoa in 2021.

2.5.1.1 Whether the FEP identifies SBRM for these fisheries?

Based on the Council and NMFS coordinated review summarized below, the SBRM identified in the Pelagic FEP for longline fisheries provide appropriate means of collecting, recording, and reporting bycatch data, satisfying the recording and reporting requirements of the 2017 SBRM rule (WPFMC 2021). The identified SBRMs meet 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 to the Pelagic FEP is needed for the identification of SBRMs for these fisheries, notwithstanding the removal of the offshore creel survey in American Samoa as described below.

The Council established SBRM for the Hawaii and American Samoa longline fisheries through the 2002 Pacific Pelagic FMP (Pelagic FMP) Amendment 8 (Supplement), which was modified

in the 2009 Pacific Pelagic FEP (Pelagic FEP). For the Hawaii longline fishery, the 2002 Pelagic FMP Amendment 8 (Supplement) identified the Hawaii longline observer program, Western Pacific daily longline fishing log (also referred to as federal logbooks), and DAR longline trip reports as SBRMs, but the 2009 Pelagic FEP later removed the DAR longline trip report from the SBRM. For the American Samoa longline fishery, the 2002 Pelagic 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.

This FEP amendment further updates the SBRM to remove the offshore creel survey from the identification of SBRM for the American Samoa longline fishery, which is no longer used to collect longline data in American Samoa. The longline observer program and the Western Pacific daily longline fishing log methodologies are summarized here, and described more fully in section 4.2.2 of the bycatch amendment (WPRFMC 2002) and in the Annual SAFE reports.

The establishment of federal 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 for all U.S. longline vessels, as well as an observer requirement when fishing within the 50-mile protected species study area around the 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.

The federal logbook system is the main source of data used to determine longline vessel activity, effort, PMUS fish catches, and catch per unit effort (CPUE). 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 report catch and effort data to NMFS. Specifically, vessel operators are required to maintain on board the vessel an accurate and complete record of catch, effort, and other data on paper or electronic forms as specified and approved by the Regional Administrator. Since September 2021, all vessels operating under the Hawaii longline limited entry permit and large vessels (equal to or over 50 ft in length) operating under the American Samoa longline limited entry permit are required to submit catch and effort data using a NMFS-certified electronic logbook within 24 hours after the completion of each fishing day. If a vessel operator is unable to maintain or transmit electronic records because NMFS has not provided an electronic logbook, if NMFS or a vessel operator identifies that the electronic logbook has experienced equipment (hardware or software) or transmission failure, or if the vessel is a small vessel under 50 ft operating under the American Samoa longline limited entry permit, paper or electronic logbooks are required to be submitted within 72 hours of the

end of each fishing trip. Both electronic and paper federal logbooks require the same catch and effort information, including the number, by species, of the PMUS kept and discarded for each longline set. The 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 a section for recording the number of non-PMUS kept and discarded; however, the catch and bycatch of non-PMUS are substantially underreported in the NMFS Western Pacific Daily Longline Fishing Log form, in because space on paper forms was limited, and the form designed to streamline reporting of non-PMUS to reduce additional burden on fishermen and maintain the reliability 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 longline fishery in 1996.

Observer data are also collected for the Hawaii and American Samoa longline fisheries, with a focus on collecting data on protected species interactions as well as recording retention and discard of all finfish species including non-PMUS. Vessels operating under the Hawaii longline limited entry permit and vessels greater than 40 ft operating under the American Samoa longline limited entry permit are required to carry a NMFS trained observer when one is assigned for a trip by NMFS. NMFS PIRO observers are deployed on all Hawaii pelagic shallow-set longline trips, and approximately 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.

2.5.1.2 Whether the FEP explains how the SBRM is used to collect, record, and report bycatch data?

The Pelagic FEP does not provide an explanation of how the SBRMs meet the purpose as described in the 2017 SBRM rule, because the Council's development of the 2002 Pelagic FMP Amendment 6 (Supplement) and 2009 Pelagic FEP preceded the 2017 SBRM rule. An amendment to the Pelagic FEP is therefore needed to add an explanation of how the SBRMs meet the purpose as defined in the rule. The explanation of how the SBRMs meet the purpose follows in this section, and the proposed amendment based on this review is described in section 3.5.

Evaluation of the Requirements for SBRM (§600.1610(a)(2)(i)-(iv)):

a) Bycatch characteristics (amount and type of bycatch)

The majority of the fish species caught in the longline fisheries are retained and landed. The main bycatch species in the Hawaii and American Samoa longline fisheries are sharks, lancetfish, and snake mackerels, which have low or no demand. Nearly all shark species caught are released and the retention of oceanic whitetip (*Carcharhinus longimanus*) and silky sharks (*Carcharhinus falciformis*) has been prohibited since 2015 (80 FR 8807). Fish are released for various reasons including quality (size and damage), handling and storage difficulties, and market demand (WPRFMC 2022e). Details on reported bycatch estimates and characteristics depend on the SBRM used. As described in review factor three below, both the NMFS Western Pacific daily longline fishing logbooks and the NMFS PIRO observer program, the SBRM for this fishery, each have their strengths and weaknesses in accurately estimating bycatch. The 2021 SAFE report for pelagic fisheries based on data from the NMFS Western Pacific daily longline

fishing logbooks reports roughly 14 percent of the deep-set catch were released or discarded. This bycatch primarily comprised of unmarketable bigeye and yellowfin tuna, striped marlin, spearfish, oilfish, and sharks (WPRFMC 2022e). In 2021, sharks accounted for 86 percent of the total logbook reported Hawaii deep-set longline catch, of which 99.9 percent was released. The bycatch rate for both targeted and incidentally caught pelagic species was 4 percent. In the shallow-set fishery, released catch comprised primarily of unmarketable bigeye, swordfish, and oilfish and blue sharks (*Prionace glauca*) (WPRFMC 2022e). Sharks accounted for 94 percent of the total logbook reported Hawaii shallow-set longline catch, 94 percent of which was released (WPRFMC 2022e). The bycatch rate for both targeted and incidentally caught pelagic species was 3 percent.

In the American Samoa fishery 6.7 percent of all logbook reported pelagic species caught were released in 2021. Sharks, oilfish, and pomfret had the highest release numbers of non-tunas, with nearly 100 percent of each species released. Around 0.9 percent of the tuna catch was released in 2021 (WPRFMC 2022e). The 2022 SAFE report utilized data from the Western Pacific daily longline fishing logs for bycatch which primarily report only PMUS. Non-PMUS are underreported by this data source.

For the first time, the 2021 SAFE report summarized non-PMUS bycatch from federal observer program data (Appendix C, WPRFMC 2022e). Various lancetfish, escolar and snake mackerels are the most numerous non-PMUS bycatch in the longline fisheries.

The U.S. National Bycatch Report estimated the 2015 bycatch for the pelagic longline fisheries to be 11.9 million lb for the Hawaii deep-set, 647,113 lb for the Hawaii shallow-set, and 790,391 lb for the American Samoa longline fishery, based on expanded federal observer data. Fishery bycatch ratios were 0.30, 0.19, and 0.13, respectively, for the Hawaii deep-set and shallow-set, and American Samoa longline fisheries.

The Hawaii and American Samoa longline fisheries also have interactions with protected species, including sea turtles, marine mammals, seabirds, and Endangered Species Act (ESA)-listed elasmobranch species (scalped hammerhead shark (*Sphyrna lewini*), oceanic whitetip shark, and giant manta ray (*Manta birostris*)). The observer program for these fisheries collects detailed information on protected species interactions in addition to gathering data on fishing effort, catch, and fish bycatch composition. This information is reported in the Pacific Islands Longline Quarterly and Annual Reports, which include data on observer coverage for vessel departures, vessels arriving with observers, protected species interactions, set and hook unit effort for vessels arriving with observers, and a calculation of protected species catch per unit effort.

b) Feasibility of cost, technical, and operational perspectives of the SBRM

The Pelagic FEP does not discuss the feasibility of cost to implement the federal logbook and observer programs, but these data collection methodologies have been in place since the early 1990s.

From a cost perspective, the logbook and observer programs for the Hawaii and American Samoa longline fisheries are federally funded by NMFS and are expected to remain as such for

the foreseeable future. The federal logbook program has been administered continuously by PIFSC since 1991 for all U.S. longline vessels operating in the Western Pacific region. Similarly, the federal observer program has been administered continuously by PIRO since 1994 for the Hawaii longline fishery, and 2005 for the American Samoa longline fishery. Effective September 2021, all vessels operating under the Hawaii longline limited entry permit and large vessels (equal to or over 50 ft in length) operating under the American Samoa longline limited entry permit are required to submit their logbook forms using a NMFS-certified electronic logbook; NMFS is responsible for purchasing, providing, and maintain the tablets, software and data transmission at no cost to fishery participants.

Because the federal logbook and observer programs have been used to collect data continuously for approximately 30 years in the Hawaii longline fishery and over 17 years in the American Samoa longline fishery, it is indicative that the cost of the SBRM is feasible. The cost will be reviewed no less than the five (5) year review required by the 2017 rule.

The long period over which the federal logbook and observer programs have been successfully implemented indicates they are feasible from a technical and operational perspective for collecting bycatch information in the Hawaii and American Samoa longline fisheries. For federal logbooks, vessel operators are responsible for recording and reporting their catch, bycatch, and effort data for every set using paper or electronic forms provided by NMFS, as specified in regulations for their fishery and vessel type (50 CFR 665.14). Both paper and electronic forms require the same information. NMFS provides training and technical assistance to vessel operators for electronic reporting. For the federal observer program, NMFS conducts annual training for new observers to maintain a sufficient pool of observers to maintain 100 percent coverage on the Hawaii shallow-set longline fishery, and a target of 20 percent coverage on the Hawaii deep-set and American Samoa longline fisheries. NMFS has maintained these coverage rates consistently, with the exception of 2020-2021 when safety and logistical issues during the COVID-19 pandemic temporarily reduced coverage (WPRFMC 2021). PIFSC updated the bycatch estimation approach to account for the lower observer coverage for generating the total fleet bycatch estimates for fish, shark and protected species by incorporating logbook effort data and past observer data (McCracken 2021, 2022). 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.

c) Uncertainty of data resulting from the SBRM

Of the two SBRMs identified for the Hawaii and American Samoa longline fisheries, the federal observer program provides the most reliable and precise source of bycatch data for a given trip. Observers trained in species identification watch each haul and record 100 percent of catch, both retained and discarded, during the assigned trip. 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. The Hawaii shallow-set longline fishery has been observed at 100 percent coverage since 2004, and thus quantitative uncertainty for bycatch data reported for this fishery is very low. The Hawaii deepset and American Samoa longline fisheries are observed at a target of 20 percent coverage. Vessels operating under the Hawaii longline limited entry permit and vessels greater than 40 ft in length operating under the American Samoa longline limited entry permit are required to notify NMFS

Pacific Islands Observer Program at least 72 hours before departure to receive an observer assignment. Deepset and American Samoa longline vessels are assigned an observer based on a sampling design developed by PIFSC (McCracken 2019a, 2019b), which takes into account the need to provide a representative sample of each fishery throughout the year as well as efficiency and practicality of observer placement while achieving the target coverage level. PIFSC statistically generates total bycatch estimates for the Hawaii deepset and American Samoa longline fisheries, which also includes a quantitative estimate of uncertainty (e.g., standard error or confidence interval).

Federal logbook programs have the advantage of high degrees of coverage, with logs required for each longline set (with one set typically completed within a 24 hour period) and on all trips. Logbook data represents a census of all longline trips, and thus does not need to be mathematically expanded to estimate total catch and bycatch. Therefore, there is no quantitative estimate of uncertainty for logbook data. Qualitatively, factors that affect uncertainty of bycatch data based on logbook data are related to the self-reported nature of the data and limitations of the logbook forms. In general, fishermen keep accurate records of fish that are retained and landed, and less accurate record of fish that are discarded. Longline vessel operators are required to record their logbook data within 24 hours after the completion of each fishing day, which helps to reduce uncertainties associated with recall bias. Recall bias may still occur; however, if fishermen do not record catch during fishing operations. Logbook data also relies on fishermen to record information about many species, many of which are difficult to identify, especially if encountered rarely. In the case of protected species, fishermen may be disinclined to report interactions 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 kept and discarded, but limited space is provided on the forms for these species because full reporting of non-PMUS would place an additional burden on fishermen and likely compromise the reliability of the PMUS data. Thus, non-PMUS are likely underreported in the federal logbooks. Bycatch data for non-PMUS can be supplemented through observer data.

d) Data use in determining amount and type of bycatch

Federal logbook data are recorded by vessel operators and reported to NMFS PIFSC, and observer data are recorded and reported by NMFS observers to NMFS Pacific Islands Observer Program. The collected raw data are summarized and incorporated into the Annual SAFE reports by the Council's Plan Teams (e.g., WPRFMC 2022e).

The Annual SAFE report summarizes the fish bycatch data from the Hawaii and American Samoa longline logbooks in terms of number and percent released at the species level, based on raw counts. Protected species interactions from observer data are also summarized in the Annual SAFE report, with annual summaries of total number of observed interactions and number observed dead for all sea turtle, marine mammal, seabird and ESA-listed elasmobranch (shark and ray) species, and estimated total interactions for each fleet. Annual SAFE reports are reviewed by the Council and several advisory bodies including the SSC for additional comments and interpretation before being finalized by the regulatory deadline of June 30th of each calendar year. Completed SAFE reports are publically available for use through the Council's website. Fish and protected species bycatch estimates are also periodically summarized in the NMFS U.S. National Bycatch Report, the Pacific Islands Longline Quarterly and Annual Reports, the Annual

Bycatch Estimation Reports, the Annual Seabird Interaction reports, and other NMFS periodic reports.

The SSC regularly discusses and provides advice to the Council and NMFS on data collection systems and methodological design considerations (e.g., data elements, sampling designs, observer coverage rate) through its meetings, in reviewing stock assessments, and as requested by the Council.

Data from federal 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, and have been used to inform the development of bycatch mitigation measures under the Pelagic FEP for sea turtles, seabirds, sharks and fish. These data are further supplemented by research and tagging data on an as-needed basis to assess post-release mortality, unobserved mortality, and other bycatch-related information to inform development of conservation and management measures to minimize bycatch and bycatch mortality.

2.5.1.3 Whether the FEP provides guidance on how to adjust implementation of the SBRM?

The Pelagic FEP does not address how NMFS should adjust funding to these programs if there is a change in available funds, as decisions would be made based on factual considerations on a case-by-case basis. Generally, costs will be reviewed no less than every five years as is required by the 2017 SBRM rule. If funding is reduced, fisheries data collection is not likely to be eliminated, but may be reduced which could potentially increase uncertainty in bycatch estimates. The Council, the SSC, and NMFS may review any potential changes in consultation with local agency partners to assess and mitigate impacts to data quality and continuity.

Overall, given the fishery characteristics and known bycatch characteristics of these fisheries, the identified SBRM are appropriate for this fishery. If the Council identifies potential bycatch concerns based on the SBRMs in this fishery, 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 Teams and Advisory Panels may also identify potential bycatch concerns based on local expert knowledge.

2.5.2 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 currently no active Western Pacific general longline permits. The Western Pacific longline permit requires federal logbook reporting, which would capture bycatch data if a longline fishery develops.

2.5.2.1 Whether the FEP identifies SBRM for these fisheries?

Based on the Council and NMFS coordinated review summarized below, the SBRM identified in the Pelagic FEP for Western Pacific longline fisheries provide appropriate means of collecting, recording, and reporting bycatch data, satisfying the recording and reporting requirements of the 2017 SBRM rule (WPFMC 2021). The identified SBRM 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 amendment to the Pelagic FEP is needed for the identification of the federal logbook as an SBRM for these fisheries.

The Council established the Western Pacific daily longline fishing log (also referred to as federal logbooks) as an SBRM for the Hawaii- and American Samoa-based longline fisheries through the 2002 Pelagic FMP Amendment 8 (Supplement), which was carried forward in the 2009 Pelagic FEP. The same logbook requirement exists for longline fisheries that would operate in Guam, the PRIA or the CNMI under the Western Pacific general longline permit, but there were no vessels active in Guam or the CNMI at that time, and the original bycatch amendment and the 2009 Pelagic FEP did not explicitly identify an SBRM for the Western Pacific general longline fisheries. Therefore, this FEP amendment includes the federal logbook as the SBRM for the Western Pacific general longline fisheries.

The federal logbook system is the main source of data used to determine longline vessel activity, effort, fish catches, and CPUE. Holders of the Western Pacific general longline permit are required to record and report catch and effort data to NMFS. Specifically, vessel operators are required to complete a log sheet within 24 hours of the end of each fishing day, maintain the log sheet on board the vessel, and submit the completed and signed logsheet to NMFS PIFSC within 72 hours of returning to port. The logbook forms require catch and effort information, including the number, by species, of the PMUS kept and discarded for each longline set. The form also requires data on the numbers of sharks kept or released, the number of protected species interactions by species and release condition, and the number of non-PMUS kept and discarded. Federal logbook requirements for federally permitted pelagic longline vessel operators have been in place since 1991.

Observers may be placed on permitted longline vessels subject to conditions at 50 CFR 665.808. Since an observer program for vessels operating under the Western Pacific general longline permit has not been established under the Pelagic FEP, observer data is not identified as an SBRM for this fishery.

2.5.2.2 Whether the FEP explains how the SBRM is used to collect, record, and report bycatch data?

The Pelagic FEP does not provide an explanation of how the SBRMs meet the purpose as described in the 2017 SBRM rule, because the Council's development of the 2002 Pelagic FMP Amendment 6 (Supplement) and 2009 Pelagic FEP preceded the 2017 SBRM rule. An amendment to the Pelagic FEP is therefore needed to add an explanation of how the SBRMs meet the purpose as defined in the rule. The explanation of how the SBRMs meet the purpose follows in this section, and the proposed amendment based on this review is described in section 3.5.

Evaluation of the Requirements for SBRM (§600.1610(a)(2)(i)-(iv)):

a) Bycatch characteristics (amount and type of bycatch)

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

captured in data analysis of logbooks, similar to the Hawaii and American Samoa fisheries, should a fishery develop.

b) Feasibility of cost, technical, and operational perspectives of the SBRM

The Pelagic FEP does not discuss the feasibility of cost to implement the federal logbook program, but this data collection methodology has been in place since the early 1990s and has been successfully implemented in other parts of the Pacific Island Region.

From a cost perspective, the logbook programs for the Western Pacific general longline fisheries are federally funded by NMFS, and are expected to remain as such for the foreseeable future. The federal logbook program has been administered continuously by PIFSC since 1991 for all U.S. longline vessels operating in the Western Pacific region. Because the federal logbook program has been used to collect data continuously for approximately 30 years in pelagic longline fisheries in the Western Pacific region. It is indicative that the cost of the SBRM is feasible.

Overall, the successful implementation of the federal logbook program in the Pacific Islands Region demonstrates that it is feasible from cost, technical and operational perspective for collecting bycatch information in the Western Pacific general longline fisheries.

c) Uncertainty of data resulting from the SBRM

Generally, a standardized reporting methodology can be designed so that the uncertainty associated with bycatch data can be described quantitatively or qualitatively (50 CFR 600.1610(a)(2)(iii)). Federal logbook programs have the advantage of high degrees of coverage, with logs required for each longline set (with one set typically completed within a 24 hour period) and on all trips. Logbook data represents a census of all longline trips, and thus does not need to be mathematically expanded to estimate total catch and bycatch. Therefore, there is no quantitative estimate of uncertainty for logbook data.

Qualitatively, factors that affect uncertainty of bycatch data based on logbook data are related to the self-reported nature of the data and limitations of the logbook forms. In general, fishermen keep accurate records of fish that are retained and landed, and less accurate record of fish that are discarded. Longline vessel operators are also required to record their logbook data within 24 hours after the completion of each fishing day, which reduces uncertainties associated with recall errors. Logbook data does rely 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 likely underreported. This limitation in the logbook form 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.

d) Data use in determining amount and type of bycatch

Federal logbook data are recorded by vessel operators and reported to NMFS PIFSC. The collected raw data, if a fishery becomes active, would be summarized and incorporated into the Annual SAFE reports by the Council's Plan Teams (e.g., WPRFMC 2022e).

The Annual SAFE report would summarize the fish bycatch data from Western Pacific general longline logbooks in terms of number and percent released at the species level should a fishery become active 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. Annual SAFE reports are reviewed by the Council and several advisory bodies including the SSC for additional comments and interpretation before being finalized by the regulatory deadline of June 30th of each calendar year. Completed SAFE reports are publically available for use through the Council's website. The SSC regularly discusses and provides advice to the Council and NMFS on data collection systems and methodological design considerations (e.g., data elements, sampling designs) through its meetings, in reviewing stock assessments, and as requested by the Council.

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 Plan Teams and Advisory Panels may also identify potential bycatch concerns based on local expert knowledge, as well as other methods that would improve methods to collect, record, and report data.

2.5.2.3 Whether the FEP provides guidance on how to adjust implementation of the SBRM?

The Pelagic FEP does not address how NMFS should adjust funding to these programs if there is a change in available funds, as decisions would be made based on factual considerations on a case-by-case basis. Generally, costs will be reviewed no less than every five years as is required by the 2017 SBRM rule. If funding is reduced, fisheries data collection is not likely to be eliminated, but may be reduced which could potentially increase uncertainty in bycatch estimates. The Council, the SSC, and NMFS may review any potential changes in consultation with local agency partners to assess and mitigate impacts to data quality and continuity.

Overall, given the fishery characteristics and known bycatch characteristics of these fisheries, the identified SBRM are appropriate. If the Council identifies potential bycatch concerns based on the SBRMs in this fishery, 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 Teams and Advisory Panels may also identify potential bycatch concerns based on local expert knowledge.

2.5.3 Hawaii Small Boat Pelagic Fisheries

The Hawaii small-boat pelagic fisheries include troll, handline and aku boat fishing methods.

Trolling is a method of fishing where one or more fishing lines, baited with lures or bait fish, are drawn through the water. The Hawaii troll fisheries target tunas, marlins, and other PMUS. In

2021, there were 1,179 fishermen who harvested approximately 1.8 million pounds. There were 654 DAR CMLs reporting trolling as the primary fishing method in 2021 (WPRFMC 2021).

The Hawaii handline fisheries are separated into offshore and MHI fisheries. The MHI handline fishery typically fishes the medium-sized tuna found on Fish Aggregation Devices 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 DAR and NMFS since 1990 (WPRFMC 2009e). There were 382 fishermen in the 2021 MHI handline fishery that harvested approximately 688,000 lb of yellowfin, albacore, and bigeye tunas. Seven offshore handline fishermen harvested approximately 253,000 lb of bigeye and yellowfin tuna, and mahimahi (*Coryphaena* spp.).

The aku boat fishery is a highly selective fishery that uses pole and line and live bait to target skipjack tuna. 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 Pelagic FEP reported 25 and 27 licensees active in 2004 and 2005. There were nine DAR CMLs in 2021. Due to historical confidentiality requirements, data are pooled with “other gear” in the SAFE reports.

2.5.3.1 Whether the FEP identifies SBRM for this fishery?

Based on the Council and NMFS coordinated review summarized below, the SBRMs identified in the Pelagic FEP for the small boat pelagic fisheries provide appropriate means of collecting, recording, and reporting bycatch data, satisfying the recording and reporting requirements of the 2017 SBRM rule (WPRFMC 2021). The identified SBRMs meet 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 to the Pelagic FEP is needed for the identification of SBRMs for these fisheries.

The Council established SBRM for the Hawaii small-boat pelagic fishery in the 2002 Pelagic FMP Amendment 8 (Supplement), which was carried forward in the 2009 Pelagic FEP. The 2009 Pelagic FEP identifies the State of Hawaii DAR commercial fish catch report (a component of the Fishery Reporting System) and the HMRFS creel survey as SBRMs for this fishery. The methodologies are summarized here, and described more fully in section 4.2.2.2 and 4.2.2.3 of the bycatch amendment (WPRFMC 2002) and in the Annual SAFE report.

Hawaii Commercial Fish Catch Report

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 one of several catch reporting forms DAR. This requirement also applies to fish caught in federal waters, including the PRIAs, but landed in Hawaii. The data submitted by commercial fishermen to DAR are compiled and analyzed by DAR, which releases the resulting reports annually.

For troll, handline and aku boat fisheries, commercial fishermen are required to submit monthly catch reports. The DAR fish catch 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 fishing lines, port of landing, species, number of fish caught, pounds landed, and number of lost and released fish by species (i.e. bycatch). It is difficult to separate catches originating from State (0-3 miles from shore) vs. Federal (3-200 miles from shore) waters as DAR uses catch reporting forms that do not differentiate between these areas. As a result, information on MHI catches represents catches from both State and Federal waters around the MHI.

Hawaii Marine Recreational Fishing Survey

DAR has been working with NMFS since 2001 to collect non-commercial (recreational) fishing data through HMRFS. This program is funded by NMFS through the MRIP and USFWS through the SFR program. It consists of two components, a mail survey to estimate fishing effort (Fishing Effort Survey) and field interviews with fishermen to survey catch during fishing trips (Access Point Angler Interview Survey). Data from these two components is combined to generate an estimate of catch. The mail surveys are sent 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 fishermen in Hawaii. To estimate the number of fish caught, DAR staff collect catch data through interviews with fishermen at various public fishing areas around the State. The surveyors identify, measure, and weigh the fish that were caught and collect information about fish that were released (i.e., bycatch).

Observers

Pursuant to the ESA, NMFS may require fishing vessels in fisheries identified through an annual determination process to carry Federal observers (72 FR 43176, August 3, 2007). However, a need for observers has not been identified; observers have not been deployed and are not an identified SBRM in this fishery.

2.5.3.2 Whether the FEP explains how the SBRM is used to collect, record, report bycatch data?

The Pelagic FEP does not provide an explanation of how the SBRMs meet the purpose as described in the 2017 SBRM rule, because the Council's development of the 2002 Pelagic FMP Amendment 6 (Supplement) and 2009 Pelagic FEP preceded the 2017 SBRM rule. An amendment to the Pelagic FEP is therefore needed to add an explanation of how the SBRMs meet the purpose as defined in the rule. The explanation of how the SBRMs meet the purpose follows in this section, and the proposed amendment based on this review is described in section 3.5.

Evaluation of the Requirements for SBRM (§600.1610(a)(2)(i)-(iv)):

a) Bycatch characteristics (amount and type of bycatch)

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 in the handline fisheries is comprised primarily of sharks, shark-bitten pelagic fish species, and small pelagic fish (WPRFMC 2009e).

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 (*Euthynnus affinis*), blue and striped marlin, and rainbow runner (*Elagatis bipinnulata*)—are usually either sold or retained for personal consumption by the crew (NMFS 2001).

Bycatch data for the Hawaii small-boat troll fishery are collected and reported through the CML reports and HMRFS. There are currently no bycatch data summarized for the Hawaii small-boat pelagic fishery in the SAFE report. However, bycatch data for non-longline fisheries will be included in the SAFE reports starting with the 2022 SAFE report.

b) Feasibility of cost, technical, and operational perspectives of the SBRM

The Pelagic FEP does not discuss the feasibility of cost to operate and maintain SBRM, but the commercial fishing report is the largest and oldest dataset that DAR has, and it has been collected and processed continuously since 1948. The HMRFS program has been in place for the non-commercial side, and data has been collected since 2003. These programs are stable and provide appropriate SBRMs from cost, technical, and operational perspectives.

From a cost perspective, the cost of collecting bycatch information is included in the cost of conducting the two fishery data collection programs. Continued operation of the commercial fish report is dependent upon DAR's continued funding of the commercial reporting program; however, this program has a long history and is expected to continue. The commercial fishing report is funded through the fees collected from the Commercial Fishing License and a local budget line item from the State of Hawaii. The HMRFS program is supported by the SFR program run by the USFWS, which requires matching funds that DAR has provided. HMRFS is also partly funded by NMFS MRIP and is undergoing certification which would provide a steady funding stream. Also, the State passed a bill in 2021 establishing a visitor recreational fishing license that would generate fees to support the non-commercial data collection. DAR has the lead role for operations and implementation of the Commercial Fishing License and HMRFS programs, and coordinates with PIFSC WPacFIN as necessary.

Because the SBRM for the Hawaii small-boat pelagic fishery have been used to collect data continuously for many years, it is indicative that the cost of the SBRMs is feasible. The costs will be reviewed no less than the five year review required by the 2017 rule. The SBRM for the Hawaii small-boat pelagic fishery are feasible for collecting bycatch information from technical and operational perspectives. The programs employ online and paper submission as appropriate, are conducted year-round, and collectively provide bycatch data from persons engaged in subsistence, recreational, charter, and commercial fishing. NMFS and the Council have not identified other technical or operational issues with these long-standing data collection and reporting programs.

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 from an operational standpoint. 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 SBRM in the fishery.

c) Uncertainty of data resulting from the SBRM

The Pelagic FEP does not explicitly discuss the uncertainty associated with the bycatch reporting methodologies. Generally, a standardized reporting methodology can be designed so that the uncertainty associated with bycatch data can be described quantitatively or qualitatively (50 CFR 600.1610(a)(2)(iii)). For Hawaii small-boat pelagic fisheries, uncertainty is not captured quantitatively because bycatch from commercial fisheries reports is a direct tally of discards and losses to predation. This tally or count is based on a census of fishing activity, and is not mathematically expanded to provide total bycatch estimates for the fishery in a way that provides a statistical measure of uncertainty (e.g., a standard deviation or confidence interval). Expansions of survey data from HMRFS could include a quantitative uncertainty for that data stream (percentage standard error), but this has not been done because the bycatch rate is low and the Council has not identified this additional level of detail as a need.

Qualitatively, factors that affect uncertainty of bycatch data are related to practical constraints of the HMRFS survey and participation in commercial fish report programs. Since HMRFS surveys do not record data from all fishing trips, the accuracy of bycatch estimates is a function of sampling intensity (WPRFMC 2002). For the HMRFS 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 utility of this data would be improved if NMFS and the MRIP developed an algorithm to expand the “thrown back” disposition code data and provide that information by species for analysis. Another factor that contributes to uncertainty is that surveyors do not observe bycatch directly, since it is not generally brought to port. There may also be an issue with consistency in asking about bycatch during the catch interview, as sometimes fishermen do not want to be delayed. This can result in abbreviating the catch interview so that bycatch questions are not addressed.

For Commercial Fish Reports, some qualitative uncertainty comes with self-reporting data and the delay in which reporting occurs. Commercial fish reports for the Hawaii small-boat pelagic fisheries are required monthly, so there may be some recall uncertainty in remembering how many pieces of each species were caught and returned to the water. These reports have the advantage of high degree of coverage, but accuracy of bycatch data may therefore be limited by the memories of fishermen and the difficulties in accurately identifying fish, mammals, sea turtles, and seabirds to the species level. Fishermen may also avoid reporting bycatch and any protected species interaction in fear of federal violations. The number of fish lost due to depredation may also be underestimated since the events occur at depth.

While other data collection methodologies such as observer programs may provide more precise estimates of bycatch, the identified SBRMs are appropriate due to the fishery characteristics and known bycatch characteristics (i.e., small fishery using selective gear that retains most fish species caught).

Overall, there are some uncertainties in bycatch data for Hawaii small-boat pelagic fisheries because not all trips are being accounted for and imperfect recall of bycatch events. However, considering that bycatch is believed to be low for this fishery based on the selective nature of the gear and fishing methods, and that most captured species are desired for sale or personal consumption, NMFS and the Council have not identified uncertainty as a substantial issue with current SBRM.

d) Data use in determining amount and type of bycatch

To date, the data collected from DAR commercial fish reports 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.

Given low expected bycatch for Hawaii small-boat pelagic fisheries, current data collection methodologies provide appropriate SBRMs. 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 Plan Teams and Advisory Panels may also identify potential bycatch concerns based on local expert knowledge, as well as other methods that would improve methods to collect, record, and report data.

2.5.3.3 Whether the FEP provides guidance on how to adjust implementation of the SBRM?

The Pelagic FEP does not address how NMFS should adjust funding to these programs if there is a change in available funds, as decisions would be made based on factual considerations on a case-by-case basis. Generally, costs will be reviewed no less than every five years as is required by the 2017 SBRM rule. If funding is reduced, fisheries data collection is not likely to be eliminated, but may be reduced which could potentially increase uncertainty in bycatch estimates. The Council, the SSC, and NMFS may review any potential changes in consultation with local agency partners to assess and mitigate impacts to data quality and continuity.

Overall, given the fishery characteristics and known bycatch characteristics of these fisheries, the identified SBRM are appropriate. If the Council identifies potential bycatch concerns based on the SBRMs in this fishery, 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 Teams and Advisory Panels may also identify potential bycatch concerns based on local expert knowledge.

2.5.4 American Samoa, Guam, and the CNMI Small-boat Pelagic Fisheries

Trolling is a method of fishing where one or more fishing lines, baited with lures or bait fish, are drawn through the water. The troll fisheries in American Samoa, Guam, and CNMI are also referred to as small-boat pelagic fisheries in the Pelagic FEP.

In American Samoa, there were less than three vessels trolling in 2021 that harvested predominantly skipjack and yellowfin tuna, and small amounts of mahimahi, blue marlin, wahoo, sailfish, and kawakawa (WPRFMC 2022a).

In Guam, 546 vessels participated in the small-boat pelagic fishery in 2021 (WPRFMC 2022a). They harvested predominantly skipjack and yellowfin tuna, mahimahi, wahoo, and blue marlin. The Guam troll fishery includes charter and non-charter vessels.

In CNMI, there were 82 vessels reporting pelagic landings in 2021. The CNMI troll fishery includes charter and non-charter vessels. Harvest includes predominantly skipjack and yellowfin tunas, mahimahi, wahoo, blue marlin, dogtooth tuna (*Gymnosarda unicolor*), and rainbow runner (WPRFMC 2022a).

2.5.4.1 Whether the FEP identifies SBRM for these fisheries?

Based on the Council and NMFS coordinated review summarized below, the SBRMs identified in the Pelagic FEP for the small boat pelagic fisheries provide appropriate means of collecting, recording, and reporting bycatch data, satisfying the recording and reporting requirements of the 2017 SBRM rule (WPRFMC 2021). The identified SBRMs meet 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 to the Pelagic FEP is needed for the identification of SBRMs for these fisheries.

The Council established SBRMs for the American Samoa, Guam, and CNMI small-boat pelagic fisheries in the 2002 Pelagic FMP Amendment 8 (Supplement), which was carried forward in the 2009 Pelagic FEP. These amendments identified the American Samoa DMWR, Guam DAWR and CNMI DFW offshore (also known as the boat-based) creel survey as the SBRMs for these fisheries. The offshore creel survey methodology is summarized here, and described more fully in section 4.2.2.3 of the bycatch amendment (WPRFMC 2002) and in Annual SAFE reports.

The creel survey data are collected by the respective fisheries agencies of each of the three island areas (American Samoa DMWR, Guam DAWR, and CNMI DFW). The offshore (boat-based) creel surveys are conducted year round, and cover fishing by vessels engaged in subsistence, recreational, charter, and commercial fishing. The creel survey program has been in place in American Samoa and Guam since 1985 and 1983, respectively. The CNMI creel survey started in 1988, was discontinued in 1996 and reinitiated in 2000.

Creel survey data are used to generate annual effort and catch estimates using algorithms developed with the assistance of PIFSC WPacFIN). 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 survey has two primary components: an effort survey to estimate the number of fishing trips and field interviews with fishermen to survey catch during fishing trips. Data from these two components is combined to generate an estimate of catch. For the effort survey component, the respective fisheries agency data collection staff conducts the initial participation run, counting the number of boats in the marina and boat-trailers on the boat ramps. For the field interview component, the data collector attempts to intercept the fishermen at the port or ramp. Once a fisherman is intercepted, the data collector conducts the catch interview, documenting effort, catch, and bycatch information. To collect bycatch information, surveyors ask fishermen if they released any fish and then obtains bycatch data on species, number and/or weight, and condition (live, dead/injured).

Pursuant to the ESA, NMFS may require fishing vessels in fisheries identified through an annual determination process to carry Federal observers (72 FR 43176, August 3, 2007). However, a need for observers has not been identified for this fishery; observers have not been deployed and are not an identified SBRM.

2.5.4.2 Whether the FEP explains how the SBRM is used to collect, record, report bycatch data?

The Pelagic FEP does not provide an explanation of how the SBRMs meet the purpose as described in the 2017 SBRM rule, because the Council's development of the 2002 Pelagic FMP Amendment 6 (Supplement) and 2009 Pelagic FEP preceded the 2017 SBRM rule. An amendment to the Pelagic FEP is therefore needed to add an explanation of how the SBRMs meet the purpose as defined in the rule. The explanation of how the SBRMs meet the purpose follows in this section, and the proposed amendment based on this review is described in section 3.5.

Evaluation of the Requirements for SBRM (§600.1610(a)(2)(i)-(iv)):

a) Bycatch characteristics (amount and type of bycatch)

Bycatch in the small-boat pelagic fisheries in all the island groups is, in general, small because the gears are very selective for marketable PMUS so most captured species are suitable for sale or personal consumption (WPRFMC 2002).

Bycatch in the American Samoa troll fishery consisted of zero released fish (WPRFMC 2022a). 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 14 fish reported as bycatch out of 7,803 fish caught (WPRFMC 2022a). 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 2007-2021 (WPRFMC 2022a).

b) Feasibility of cost, technical, and operational perspectives of the SBRM

The Pelagic FEP does not discuss the feasibility of cost to operate and maintain creel surveys, but the creel surveys have been consistently conducted in American Samoa, Guam and CNMI since 1985, 1983, and 2000, respectively.

From a cost perspective, the cost of collecting bycatch information is included in the cost of conducting the creel surveys. The creel surveys are funded through a combination of federal and non-federal funding sources, including the Cooperative Agreement between territorial management agencies and the USFWS SFR, NOAA PIRO IFA funds, and NOAA PIFSC WPacFIN grant funds. The collection, recording, and reporting of bycatch are funded through the USFWS SRF for the shore-based creel survey and IFA for the boat-based creel survey. In addition, with technical support from PIFSC, DMWR has continuously conducted the creel survey for its fishery data collection for over 20 years. The funding may fluctuate, but base-funding has provided stable support these for surveys, enabling the creel methodology to monitor bycatch over time. Because the creel surveys have been used to collect data continuously for

over 36 years in American Samoa and Guam, and over 20 years in CNMI, it is indicative that the cost of the SBRM is feasible.

The creel survey is feasible from a technical and operational perspective for collecting bycatch information in American Samoa, Guam and CNMI small-boat pelagic fisheries. It is conducted year-round and covers fishing by persons engaged in subsistence, recreational, charter, and commercial fishing (WPRFMC 2009a). The territory fishery agency staff conduct interviews on scheduled survey days (four survey days on weekdays and one survey day on weekend). During the scheduled catch interview period, the surveyors question the intercepted fishermen on whether they caught and released any fish and inquire about the species and the amount of fish released. The creel survey form 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 2021 SAFE report indicates that the number of sample days has been fairly stable, but the number of regular survey interviews varies from year to year. 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. In spite of these challenges, the creel survey programs in American Samoa, Guam and CNMI have been operating continuously for several decades and are appropriate for collecting bycatch information in these fisheries.

Other potential options to gather bycatch data such as observer programs could potentially 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 such as this one. The small size of vessels in these fisheries also makes the placement of observers operationally 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.

c) Uncertainty of data resulting from the SBRM

For American Samoa, Guam and CNMI small-boat pelagic fisheries, uncertainty is not captured quantitatively because bycatch is estimated as a direct tally of discards and losses to predation. This tally or count is not mathematically expanded to provide total bycatch estimates for the fishery in a way that provides a statistical measure of uncertainty (e.g., a standard deviation or confidence interval), because the bycatch rate is extremely low and the Council has not identified this additional level of detail as a need.

Qualitatively, factors that affect uncertainty of bycatch data are related to practical constraints of the creel survey. Since these surveys do not record data from all fishing trips, the accuracy of bycatch estimates is a function of sampling intensity (WPRFMC 2002). The majority, if not all, of the catch in the small-boat pelagic fishery are kept (as a matter of cultural practice). Thus, trips with bycatch are rare and the chances of intercepting those trips are relatively small given the nature of the creel survey. Another factor that contributes to uncertainty is that surveyors do not observe bycatch directly, since it is not generally brought to port. Accuracy of bycatch data

may therefore be limited by the memories of fishermen and the difficulties in accurately identifying fish, mammals, sea turtles, and seabirds to the species level. Fishermen may also avoid reporting bycatch and any protected species interaction in fear of federal violations. There may also be an issue with consistency in asking about bycatch during the catch interview, as sometimes fishermen do not want to be delayed from delivering their fish to the market and getting paid. This can result in abbreviating the catch interview to the most pertinent questions and may result in incomplete interviews.

Lastly, there is a degree of uncertainty in bycatch estimates in CNMI because the offshore 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.

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 (fisheries using selective gear that retains most fish species caught).

Overall, there are some uncertainties in bycatch data because not all trips are being accounted for and bycatch events are rare. However, considering that reported bycatch rates are low in the fishery, NMFS and the Council have not identified uncertainty as a substantial issue with current SBRM.

d) Data use in determining amount and type of bycatch

Creel survey data including bycatch data collected by the territory fishery agencies are reported to NMFS PIFSC for storage in a database. The collected raw data are summarized and incorporated into the Annual SAFE reports by the Council's Plan Teams (e.g., WPRFMC 2022a). The Annual SAFE report summarizes the total number of fish released and percentage of catch released by year, based on the raw counts. These counts are not expanded to provide total bycatch estimates for the fishery. The Annual SAFE reports are reviewed by the Council and several advisory bodies including the SSC for additional comments and interpretation before being finalized by the regulatory deadline of June 30th of each calendar year. Completed SAFE reports are publically available for use through the Council's website.

The Council also conducts data workshops aimed at improving data collection systems in the region. Reports from the 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 PIFSC on data collection systems and methodological 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.

Given the small scale fisheries in American Samoa, Guam and CNMI and negligible bycatch, the creel survey is an appropriate SBRM. If the Council identifies potential bycatch concerns based on creel survey data or other information, the Council may in the future recommend additional data collection efforts to improve bycatch estimates to inform the 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 SSC, Plan Teams, and Advisory Panels may also identify potential bycatch concerns based on local expert knowledge, as well as other methods that would improve methods to collect, record, and report data.

2.5.4.3 Whether the FEP provides guidance on how to adjust implementation of the SBRM?

The Pelagic FEP does not address how NMFS should adjust funding to these programs if there is a change in available funds, as decisions would be made based on factual considerations on a case-by-case basis. Generally, costs will be reviewed no less than every five years as is required by the 2017 SBRM rule. If funding is reduced, fisheries data collection is not likely to be eliminated, but may be reduced which could potentially increase uncertainty in bycatch estimates. The Council, the SSC, and NMFS may review any potential changes in consultation with local agency partners to assess and mitigate impacts to data quality and continuity.

Overall, given the fishery characteristics and known bycatch characteristics of these fisheries, the identified SBRM are appropriate. If the Council identifies potential bycatch concerns based on the SBRMs in this fishery, 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 Teams and Advisory Panels may also identify potential bycatch concerns based on local expert knowledge.

2.5.5 PRIA Small-boat Pelagic Fisheries

Regulatory Amendment 2 to the Pelagic 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.

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.

2.5.5.1 Whether the FEP identifies SBRM for this fishery?

Based on the Council and NMFS coordinated review summarized below, the SBRMs identified in the Pelagic FEP for the PRIA small boat pelagic fisheries provide appropriate means of collecting, recording, and reporting bycatch data, satisfying the recording and reporting requirements of the 2017 SBRM rule (WPFMC 2021). The identified SBRMs meet 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 to the Pelagic FEP is needed for the identification of SBRMs for these fisheries.

The Council established SBRM for the PRIA small-boat pelagic fishery in the 2002 Pelagic FMP Amendment 8 (Supplement), which was carried forward forth in the 2009 Pelagic FEP. These amendments identified federal logbooks, DAR 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 as the SBRMs for these fisheries.

Pursuant to the ESA, NMFS may require fishing vessels in fisheries identified through an annual determination process to carry Federal observers (72 FR 43176, August 3, 2007). However, a need for observers has not been identified for this fishery; observers have not been deployed and are not an identified SBRM.

2.5.5.2 Whether the FEP explains how the SBRM is used to collect, record, report bycatch data?

The Pelagic FEP does not provide an explanation of how the SBRMs meet the purpose as described in the 2017 SBRM rule, because the Council's development of the 2002 Pelagic FMP Amendment 6 (Supplement) and 2009 Pelagic FEP preceded the 2017 SBRM rule. An amendment to the Pelagic FEP is therefore needed to add an explanation of how the SBRMs meet the purpose as defined in the rule. The explanation of how the SBRMs meet the purpose follows in this section, and the proposed amendment based on this review is described in section 3.5.

Evaluation of the Requirements for SBRM (§600.1610(a)(2)(i)-(iv)):

a) Bycatch characteristics (amount and type of bycatch)

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. Thus, there is no data on either the amount or type of bycatch. Based on the small-boat pelagic fisheries in Hawaii, American Samoa, Guam and CNMI, troll and handline fisheries result in low level of bycatch due to the selective nature of the gear, and similar bycatch rates would be expected should any fishing occur in the PRIA. Moreover, because federal permits and logbooks are required, should fishing occur the logbooks would provide bycatch information. Included in the daily logbook is a requirement to enter the number released by species for all fish caught. Additionally, fishermen who hold a Hawaii commercial marine license are required to record catch and effort data and report them through the DAR fish catch reports. DAR collects non-commercial fishing data through the HMRFS, which consists of mail surveys and collection of catch data by DAR contract staff at public fishing areas around the State. 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 currently no sportfishing allowed in the Papahānaumokuākea Marine National Monument or the Midway Atoll Special Management Area. Available data would be summarized in the annual SAFE reports.

b) Feasibility of cost, technical, and operational perspectives of the SBRM

Federal permits and reporting are required for troll and handline fisheries in the PRIA. The Pelagic FEP does not explicitly discuss the feasibility of maintaining SBRM for this fishery. However, federal logbook reports are funded internally by NMFS along with other federal reporting programs, and the requirement for logbooks for PRIAs has been in place since 2002. Given the lack of participation, the continuation of federal logbooks is not expected to be cost prohibitive and the cost of collecting bycatch information is included in the cost of conducting the two fishery data collection programs.

The SBRM for the PRIA small-boat pelagic fishery are feasible for collecting bycatch information from technical and operational perspectives. The programs employ online and paper submission as appropriate, are conducted year-round, and collectively provide bycatch data from persons engaged in subsistence, recreational, charter, and commercial fishing. NMFS and the Council have not identified other technical or operational issues with these long-standing data collection and reporting programs.

c) Uncertainty of data resulting from the SBRM

Uncertainty in the data would be similar to any uncertainties in federal logbook data from fisheries that are self-reporting. Data would be a census of fishing activity and would not have a quantitative statistical uncertainty. Qualitative uncertainty could arise because fishermen may also avoid reporting bycatch or a protected species interaction in fear of federal violations. Recall error with filling out fishing reports may result in reporting of inaccurate or incomplete data. However, the nature of this uncertainty is not expected to affect management of the fisheries due to the low volume of fishing.

d) Data use in determining amount and type of bycatch

The data on the number of bycatch released by species contained in the logbooks can provide the type and quantify the amount of bycatch occurring in these fisheries. If active fisheries existed so that reports were available, the data collected by the logbooks would be summarized in the PRIA Annual SAFE report. If the Council were to identify a bycatch concern in the future based on the existing SBRMs or other sources of data, the Council may take action in the future to recommend additional data collection methodologies.

2.5.5.3 Whether the FEP provides guidance on how to adjust implementation of the SBRM?

The Pelagic FEP does not address how NMFS should adjust funding to these programs if there is a change in available funds, as decisions would be made based on factual considerations on a case-by-case basis. Generally, costs will be reviewed no less than every five years as is required by the 2017 SBRM rule. If funding is reduced, fisheries data collection is not likely to be eliminated, but may be reduced which could potentially increase uncertainty in bycatch estimates. The Council, the SSC, and NMFS may review any potential changes in consultation with local agency partners to assess and mitigate impacts to data quality and continuity.

Overall, given the fishery characteristics and known bycatch characteristics of these fisheries, the identified SBRM are appropriate. If the Council identifies potential bycatch concerns based on the SBRMs in this fishery, 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 Teams and Advisory Panels may also identify potential bycatch concerns based on local expert knowledge.

2.5.6 Squid Jig Fishery

Squid jig fishing is defined as fishing for squid that are PMUS using a hook or hooks attached to a line that is raised and lowered in the water column by manual or mechanical means. In 2008, Amendment 15 to the Pelagic FMP established the Western Pacific squid jig fishing permit. A

U.S. vessel must have this permit if the vessel is more than 50 feet long and have will participate in the squid jig fishery in EEZ waters around American Samoa, CNMI, Guam, Hawaii or the PRIA. There is currently no active fishery operating under this permit.

2.5.6.1 Whether the FEP identifies SBRM for this fishery?

Based on the Council and NMFS coordinated review summarized below, the SBRMs identified in the Pelagic FEP for the squid jig fishery provide appropriate means of collecting, recording, and reporting bycatch data, satisfying the recording and reporting requirements of the 2017 SBRM rule (WPFMC 2021). The identified SBRMs meet 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 to the Pelagic FEP is needed for the identification of SBRMs for these fisheries.

The Council established the SBRM for the squid jig fishery in the 2009 Pelagic FEP, which identified the NMFS squid jig logbook, NMFS High Seas Fishing Compliance Act (HSFCA) logbook, and DAR Fish Catch Report (if landed in Hawaii) as SBRMs for this fishery. It also identifies observer coverage as SBRM for the squid jig fishery. Vessels more than 50 feet in length are required to obtain a Western Pacific squid jig fishing permit, carry federal observers if requested by NMFS, and report any Pacific pelagic squid catch using a federal logbook for the fishery. Smaller vessels may conduct commercial squid jig fishing and report their data through other applicable reporting systems (DAR Fish Catch Report or HSFCA logbook).

Pursuant to the ESA, NMFS may require fishing vessels in fisheries identified through an annual determination process to carry Federal observers (72 FR 43176, August 3, 2007). However, a need for observers has not been identified for this fishery; observers have not been deployed and are not an identified SBRM.

2.5.6.2 Whether the FEP explains how the SBRM is used to collect, record, report bycatch data?

The Pelagic FEP does not provide an explanation of how the SBRMs meet the purpose as described in the 2017 SBRM rule, because the Council's development of the 2002 Pelagic FMP Amendment 6 (Supplement) and 2009 Pelagic FEP preceded the 2017 SBRM rule. An amendment to the Pelagic FEP is therefore needed to add an explanation of how the SBRMs meet the purpose as defined in the rule. The explanation of how the SBRMs meet the purpose follows in this section, and the proposed amendment based on this review is described in section 3.5.

Evaluation of the Requirements for SBRM (§600.1610(a)(2)(i)-(iv)):

a) Bycatch characteristics (amount and type)

There is currently no active squid jig fishery. However, squid jig fisheries are considered very selective fisheries, with low levels of bycatch (AG 2010). Based on past data collection for the fishery, 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). Should squid jig fishing occur, bycatch would be reported through a federal logbook for vessels larger than 50 feet, which may also be required to carry an observer if requested by NMFS. Smaller vessels would report their catch and bycatch information through the NMFS HHSFCA logbook or DAR Fish Catch Report (if landed in Hawaii).

b) Feasibility of cost, technical, and operational perspectives of the SBRM

Federal permit and reporting are required for squid jig vessels larger than 50 feet. The Pelagic FEP does not explicitly discuss the feasibility of maintaining SBRM for this fishery. However, federal logbook reports are funded internally by NMFS along with other federal reporting programs, and the requirement for logbooks for the squid jig fishery has been in place since 2007. Given the lack of participation, the continuation of federal logbooks is not expected to be cost prohibitive and the cost of collecting bycatch information is included in the cost of conducting the two fishery data collection programs.

The SBRMs for the squid jig fishery are feasible for collecting bycatch information from technical and operational perspectives. The programs employ online and paper submission as appropriate, are conducted year-round, and collectively provide bycatch data from persons engaged in the fishery. NMFS and the Council have not identified other technical or operational issues with these long-standing data collection and reporting programs. Overall, NMFS implemented HSFCA reporting requirements in 1999, and HDAR has continuously operated the Fish Catch Report program since 1948, indicating that these programs are feasible.

c) Uncertainty of data resulting from the SBRM

Uncertainty in the data would be similar to any uncertainties in federal logbook or HDAR Fish Catch Report data from fisheries that are self-reporting. Qualitative uncertainty could arise because fishermen may also avoid reporting bycatch or a protected species interaction in fear of federal violations. Recall error with filling out fishing reports may result in reporting of inaccurate or incomplete data. If implemented, the federal observer program for squid jig fishery would provide a means to quantitatively estimate uncertainty of bycatch.

d) Data use in determining amount and type of bycatch

The data on the number of bycatch released by species contained in the logbooks can provide the type and quantify the amount of bycatch occurring in these fisheries. Data would be a census of fishing activity and would not have a quantitative statistical uncertainty. If active fisheries existed so that reports were available, the data collected by the logbooks, DAR Fish Catch Reports, and observer programs would be summarized in the Annual SAFE report. Completed SAFE reports are publically available for use through the Council's website. Qualitative uncertainty could arise because fishermen may also avoid reporting bycatch or a protected species interaction in fear of federal violations. Recall error with filling out fishing reports may result in reporting of inaccurate or incomplete data. However, the nature of this uncertainty is not expected to affect management of the fisheries due to the low volume of fishing. If the Council identifies a bycatch concern in the future based on the existing SBRMs or other sources of data, the Council may take action in the future to recommend additional data collection methodologies.

2.5.6.3 Whether the FEP provides guidance on how to adjust implementation of the SBRM?

The Pelagic FEP does not address how NMFS should adjust funding to these programs if there is a change in available funds, as decisions would be made based on factual considerations on a case-by-case basis. Generally, costs will be reviewed no less than every five years as is required by the 2017 SBRM rule. If funding is reduced, fisheries data collection is not likely to be eliminated, but may be reduced which could potentially increase uncertainty in bycatch estimates. The Council, the SSC, and NMFS may review any potential changes in consultation with local agency partners to assess and mitigate impacts to data quality and continuity.

Overall, given the fishery characteristics and known bycatch characteristics of these fisheries, the identified SBRM are appropriate. If the Council identifies potential bycatch concerns based on the SBRMs in this fishery, 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 Teams and Advisory Panels may also identify potential bycatch concerns based on local expert knowledge.

2.5.7 Albacore Troll and US Purse Seine Fisheries

The 2002 Pelagic FMP Amendment 8 (Supplement) and the 2009 Pelagic FEP identified SBRMs for the U.S. albacore troll fishery and U.S. purse seine fishery. These fisheries are not actively managed under the Pelagic FEP, and thus SBRMs are not required. This FEP amendment therefore removes the identification of SBRM for these fisheries. A brief description of the data collection methods associated with these two fisheries are included below.

Albacore Troll Vessels

Pursuant to the High Seas Compliance Act, 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 (PFMC). The PFMC is responsible for addressing SBRM requirements for this fishery.

U.S. Purse Seine

The Council does not domestically manage the U.S. purse seine fleet. Pursuant to the 1988 South Pacific Tuna Treaty Act, U.S. 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 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. The data are stored at the SPC and at the SWFSC. The results are published in Annual Pelagic SAFE reports. Additionally, the SPC requires observer coverage.

2.6 Ecosystem Component Species

The Council reclassified a large number of its MUS as ECS in 2019 through Amendment 4 to the American Samoa FEP, Amendments 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 (84 FR 2767, February 8, 2019). 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
 - Some bottomfish
 - Coral Reef species
 - Crustaceans
 - Precious corals
- Marianas FEP
 - Some bottomfish
 - Coral reef species
 - Crustaceans
 - Precious corals
- Hawaii FEP
 - Some bottomfish
 - Coral reef species
 - Some crustaceans (e.g., Lobsters)
 - Some precious corals

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 through the same data collection methodologies identified above as SBRM (e.g., commercial reports, federal logbooks, creel surveys). 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 for ECS in federal waters were retained, where applicable.

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 will be removed from the FEPs.

The ECS fisheries occur primarily in territorial/state waters (0-3 miles) with relatively 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). NMFS and the Council have implemented gear restrictions as regulatory measures to reduce bycatch from destructive fishing

methods. Specifically, fishing for bottomfish ECS with bottom trawls and bottom set gillnets is prohibited, as is the possession or use of any poisons, explosives, or intoxicating substances for the purpose of harvesting bottomfish or coral reef ECS (51 FR 27413, August 27, 1986; WPRFMC 2002a).

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 Plan Teams and Advisory Panels 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.

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 Pacific Pelagic Fisheries to update the SBRMs and associated descriptions in the FEP for consistency with the 2017 SBRM rule. In addition to identifying the standardized reporting bycatch methodologies, an FEP must also explain how the standardized reporting methodology meets the regulatory requirement to collect, record, and report bycatch data in a fishery (50 CFR 600.1600). Such information is used to assess the amount and type of bycatch occurring in a fishery, as well as to inform the development of management measures that minimize bycatch and bycatch mortality. The Council's five FEPs generally met all the 2017 regulatory requirements except for the requirement to explain how the SBRMs satisfied the purpose of 50 CFR 600.1600. The following sections provide the explanation to be included in the proposed amendments for each fishery managed under the five FEPs. The amendments also identify SBRMs not previously described for some fisheries and note a removal of a SBRM no longer applicable for American Samoa longline, as well as removal of fisheries targeting ECS (as SBRMs are not required). For each FEP to be amended, we identify the changes, if any, to be made and describe the amendment language that is adopted.

3.1 American Samoa Archipelago FEP

The American Samoa Archipelago FEP is amended as follows:

1. Update the SBRM table, Table 19 in the FEP, (**Table 1**) to:
 - a. Remove fisheries that target ECS species (data collection methods that will remain in place for those fisheries are identified in (**Table 2**)).

2. Include an explanation of how the SBRM complies with the regulatory requirement to collect, record, and report bycatch data (50 CFR 600.1600), including language to address potential adjustments to the identified SBRMs. The explanation included in this FEP is as follows:

The SBRMs for the American Samoa bottomfish fishery include 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 8.2.1.8 of the 2009 AS 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 satisfy the regulatory requirements for SBRM because these methodologies provide the means for the Council to determine the approximate amount and type of bycatch occurring in the fishery, and data from these SBRMs may be used along with other sources of data to inform the development of conservation and management measures⁴. The creel surveys used to collect and record bycatch data for this fishery are appropriate SBRMs based on the fishery characteristics and known bycatch characteristics. If changes are needed for any of the identified SBRMs, 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 currently identified as SBRM; however, observers could be required by regulation (50 CFR 665.105), and observer data could be used to supplement creel survey data.

⁴ When this text is transferred to the living FEP, citations will be included to reference this amendment and the review report to provide context for this conclusion.

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 potentially harvested coral reef taxa (PHCRT) catch and effort	DMWR Boat-based, Shore-based Creel Surveys
Precious Corals	None	Federal logbook required for all catch and effort	None
Crustaceans	Could supplement data if implemented ¹	Federal logbook required for all lobster catch and effort	DMWR Boat-based, Shore-based Creel Surveys

¹ Has not been implemented; however, observers could be required by regulation (50 CFR 665.145), and observer data could be used to supplement creel survey data.

3.2 Mariana Archipelago FEP

The Mariana Archipelago FEP is amended as follows:

- Update the SBRM table, Table 29 in the FEP, (**Table 3**) to:
 - Add shore-based creel survey to the CNMI bottomfish SBRMs;
 - Remove fisheries that target ECS species (data collection methods that will remain in place for those fisheries are identified in **Table 4**).
- Include an explanation that the SBRM complies with the regulatory requirement to collect, record, and report bycatch data (50 CFR 600.1600), including language to address potential adjustments to the identified SBRMs. The explanation included in this FEP is as follows:
- For the Guam bottomfish fishery, 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 8.2.7 of the 2009 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 satisfy the regulatory requirements for SBRM because these methodologies provide the means for the Council to determine the approximate amount and type of bycatch occurring in the fishery, and data from the SBRMs may be used along with other sources of data to inform the development of conservation and management measures⁵. The creel surveys and federal logbook programs used to collect and record bycatch data for this fishery are appropriate SBRMs based on the fisheries' characteristics and known bycatch characteristics. If changes are needed for any of the identified SBRMs, 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 (50 CFR 665.407), and observer data could be used to supplement creel survey data.

⁵ When this text is transferred to the living FEP, citations will be included to reference this amendment and the review report to provide context for this conclusion.

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	Could supplement data if implemented ¹	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

¹ Has not been implemented; however, observers could be required by regulation (50 CFR 665.445), and observer data could be used to supplement creel survey data.

3.3 Hawaii Archipelago FEP

This action would amend the Hawaii Archipelago FEP as follows:

1. Update the SBRM table, Table 38 in the FEP, (**Table 5**) to:
 - a. Remove fisheries that target ECS species (data collection methods that will remain in place for those fisheries are identified in **Table 6**).
2. Include an explanation that the SBRMs satisfy the regulation to collect, record and report bycatch data (50 CFR 600.1600), including language to address potential adjustments to the identified SBRMs. The explanation included is as follows:

State and federal fishery data collection methodologies constitute the SBRMs for the MHI and NWHI bottomfish fisheries, crustacean fishery, and precious coral fishery. SBRMs for the MHI bottomfish fishery consist of the DAR fish catch report (commercial), HMRFS (non-commercial), and the federal logbook for MHI non-commercial bottomfish permittees. SBRMs for the NWHI bottomfish fishery are the DAR NWHI bottomfish trip daily log and the federal observer program, when active. SBRMs for the crustacean fishery include the DAR fish catch report (commercial), federal logbook for deepwater shrimp, and HMRFS (if crustacean data are collected in the future). SBRMs for the precious coral fishery consist of the DAR fish catch report and the federal logbook.

Fishermen who hold a State of Hawaii commercial marine license are required to record catch and effort data and report them through the DAR fish catch reports. DAR collects non-commercial fishing data through the HMRFS, which consists of mail surveys and collection of catch data through a creel survey done by DAR 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 8.2.8 of the Hawaii 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 satisfy the regulatory requirements for SBRM because these methodologies provide the means for the Council to determine the approximate amount and type of bycatch occurring in these fisheries, and data from the SBRMs may be used along with other sources of data to inform the development of conservation and management measures⁶. The SBRMs for these fisheries are appropriate based on known fishery and bycatch characteristics. If modifications are needed for any of the identified SBRMs, the Council, PIRO, PIFSC and the SSC would consult to ensure that data collection methods 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)	DAR 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

⁶ When this text is transferred to the living FEP, citations will be included to reference this amendment and the review report to provide context for this conclusion.

	Observer programs	NMFS Federal Logbook programs (EEZ waters)	DAR State Logbook Programs (All waters)	Creel surveys (All waters)
NWHI Bottomfish²	NMFS: 1981-1982, 2003 - 2005 DAR: 1990-1993 All fishing vessels must carry an observer when directed to do so by the NMFS Regional Administrator.	DAR 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 ⁴	Required for all catch and effort	Fish Catch Report (commercial only)	None

¹ Not identified as SBRM, although observers could be required by regulation at 50 CFR 665.207 (bottomfish) and 665.247 (crustaceans); 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.

⁴ Not identified as SBRM, but pursuant to the ESA, 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).

Table 6: Data Collection Methods for Hawaii Archipelago ECS

	Observer programs	NMFS Federal Logbook programs (EEZ waters)	DAR State Logbook Programs (All waters)	Creel surveys (All waters)
Crustaceans (ECS)	Could supplement if implemented ¹	Federal logbook required for all lobster	Fish Catch Report (commercial only)	HI Marine Recreational Fishing Survey ²

	Observer programs	NMFS Federal Logbook programs (EEZ waters)	DAR State Logbook Programs (All waters)	Creel surveys (All waters)
Coral Reef ECS	None ³	Required for all PHCRT catch and effort	Fish Catch Report (commercial only)	HI Marine Recreational Fishing Survey
Precious Corals (ECS)	None ³	Required for all catch and effort	Fish Catch Report (commercial only)	None

¹ Has not been implemented; however, observers could be required by regulation (50 CFR 665.445), and observer data could be used to supplement creel survey data.

² 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

³ Not identified as SBRM, but pursuant to the ESA, 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).

3.4 PRIA FEP

This action would amend the PRIA FEP as follows:

1. No changes will be made to the SBRM table, Table 19 in the FEP, (**Table 7**)
2. Add an explanation that the SBRM meets the regulatory requirement to collect, record, and report bycatch data (50 CFR 600.1600), including language to address potential adjustments to the identified SBRMs. The proposed explanation included is as follows:

The federal logbooks are 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 federal 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 satisfy the regulatory requirements for SBRM because these methodologies provide the means for the Council to determine the approximate amount and type of bycatch occurring in these fisheries, and data from the SBRMs may be used along with other sources of data to inform the development of conservation and management measures⁷. The SBRMs for these fisheries are appropriate based on known fishery and bycatch characteristics. If modifications are

⁷ When this text is transferred to the living FEP, citations will be included to reference this amendment and the review report to provide context for this conclusion.

needed for any of the identified SBRMs, the Council, PIRO, PIFSC and the SSC would consult to ensure that data collection methods 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 regulations at 50 CFR 665.606 (bottomfish) 50 CFR 665.645 (crustaceans)), and observer data could be used to supplement federal logbook data.

² Not identified as SBRM, but pursuant to the ESA, 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 16 in the FEP, (**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; and
 - c. Remove U.S. Albacore and Purse Seine fisheries from the SBRM table.
2. Add an explanation that the SBRM satisfies the requirement to collect, record, and report bycatch data (50CFR 600.1600), including language to address potential adjustments to the identified SBRMs. The explanation included in the FEP is as follows:

SBRMs for the Hawaii and American Samoa longline fisheries include 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 in the fishing logs 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 in the Annual SAFE reports.

SBRMs for the Hawaii small-boat troll and handline fishery are comprised of the DAR fish catch report (commercial) and HMRFS (non-commercial). Fishermen who hold a State of Hawaii CML are required to record catch and effort data and report them through the DAR fish catch reports. DAR collects non-commercial fishing data through the HMRFS, which consists of mail surveys and collection of catch data by DAR 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. The collected data by these agencies are then reported to NMFS PIFSC for permanent storage. Available data from the creel surveys are summarized in the Annual SAFE reports.

SBRMs for the PRIA small-boat fishery consist of federal logbooks, DAR 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 CML are required to record catch and effort data and report them through the DAR fish catch reports. DAR collects non-commercial fishing data through the HMRFS, which consists of mail surveys and collection of catch data by DAR staff at public fishing areas around the State. Available data would be summarized in the Annual SAFE reports.

SBRMs for the squid jig fishery include the NMFS HSFCA logbook, NMFS squid jig logbook, and DAR 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, and fishermen who hold a Hawaii CML would be required to record catch and effort data and report them through the DAR 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 satisfy the regulatory requirements for SBRM because these methodologies provide the means for the Council to determine the

approximate amount and type of bycatch occurring in these fisheries, and data from the SBRMs may be used along with other sources of data to inform the development of conservation and management measures⁸. The SBRMs for these fisheries are appropriate based on known fishery and bycatch characteristics. If modifications are needed for any of the identified SBRMs, the Council, PIRO, PIFSC and the SSC would consult to ensure that data collection methods continue to provide robust and representative data to support science and management needs.

Table 8: Updated SBRM for Pacific Pelagic Fisheries

	Observer programs	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	DAR 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
Guam-based Small Boats	None ²	N/A	DAWR Offshore Survey

⁸ When this text is transferred to the living FEP, citations will be included to reference this amendment and the review report to provide context for this conclusion.

	Observer programs	Logbook programs	Creel surveys
PRIA Small Boats	None ²	NMFS PRIA Troll/Handline Logbook, DAR 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	Could supplement SBRM ³	NMFS HFSCA logbook NMFS Squid Jig logbook DAR Fish Catch Report (commercial only, if landed in Hawaii)	N/A

¹Not identified as SBRM. Observers could, however, be required by regulation (50 CFR 665.207), and observer data could be used to supplement logbook data.

²Not identified as SBRM, but pursuant to the ESA, 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).

³Not identified as SBRM, but since 2008 vessels more than 50 feet in length are required to obtain a Western Pacific squid jig fishing permit and carry federal observers if requested by NMFS.

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 descriptions of existing SBRMs for consistency with the 2017 SBRM rule issued by NMFS (82 FR 6317, January 19, 2017). Updates to the FEPs also include the following changes to SBRM tables:

- i. American Samoa Archipelago FEP and Hawaii FEP: remove fisheries that target ECS
- ii. Mariana Archipelago FEP: add shore-based creel survey to the CNMI bottomfish SBRM and remove fisheries that target ECS

- iii. Pacific Pelagic FEP: remove creel survey from the SBRM for the American Samoa longline fishery, identify Western Pacific longline fishing logbook as SBRM for the Western Pacific general longline fishery, and remove U.S. albacore and purse seine fisheries from the SBRM table

The current amendment would therefore not modify or remove any existing data collection methodologies or reporting requirements, 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 and administrative nature of the amendment, 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, socioeconomic setting, fishery administration or enforcement, and thus qualifies for a categorical exclusion (CE) from NEPA requirements to conduct an Environmental Assessment (EA) or Environmental Impact Assessment (EIS).

5 MAGNUSON-STEVENSON 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 or data collection practices. The SBRMs identified in the FEPs help to assess the amount and type of bycatch occurring in each fishery, and where appropriate, to evaluate the impact of bycatch mortality 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 or data collection practices. The SBRMs identified in the FEPs help 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 or data collection practices, 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 SBRM rule provides that different SBRM may be appropriate for different fisheries due to the inherent diversity or characteristics of the fisheries. The FEPs identify the fishery data collection methodologies in each fishery as the SBRM, which may 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. The action does not affect costs or result in unnecessary create duplication.

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 an 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. The SBRM rule does not require inclusion of the methods used to assess bycatch, nor the development of measures to minimize bycatch or bycatch mortality. Bycatch information collected through the SBRMs may, however, be used to inform and develop mitigation measures. Most of the archipelagic fisheries operating under the FEPs for Hawaii, PRIA, American Samoan, Guam and CNMI have low levels of bycatch that do not result in significant mortality to managed stocks of fish. The Council has developed bycatch mitigation measures for longline fisheries operating under the Pelagic FEP, and fishery performance against those measures continues to be monitored through the SBRMs. This amendment does not change any aspect of the implementation or the SBRM, and would not affect bycatch monitoring, assessment, or resulting management. If the Council identifies additional needs for minimizing bycatch and bycatch mortality through information collected through the SBRMs, 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 or data collection practices, 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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7 REFERENCES

- Australian Government – Department of the Environment, Water, Heritage and the Arts (AG). 2010. Assessment of the Southern Squid Jig Fishery. Commonwealth of Australia Department of the Environment, Water, Heritage and the Arts. 20 pp.
<https://www.dcceew.gov.au/sites/default/files/env/pages/e4add34a-e315-4431-8337-1be3961e84eb/files/southern-squid-jig-assessment-report-2010.pdf>
- Hospital, S. B. 2015. Western Pacific Creel Survey Program Data Summary and Analysis. Guam, the Commonwealth of the Northern Mariana Islands, and American Samoa. Pacific Islands Fisheries Science Center (PIFSC), National Marine Fisheries Service, NOAA, Honolulu, HI. PIFSC Admin. Rep. H-15-06C, 194 pp.
- Kapur MR, Fitchett MD, Yau AJ, Carvalho F. 2019. 2018 Benchmark Stock Assessment of Main Hawaiian Islands Kona Crab. NOAA Tech Memo. NMFS-PIFSC-77, 114 p.
doi:10.25923/7wf2-f040
- Ostazeski, J. 1997. *The deepwater shrimp fishery of the Northern Mariana Islands*. Honolulu Lab., Southwest Fish. Sci. Cent., Natl. Mar. Fish. Serv., NOAA, Honolulu, HI. Southwest Fish. Sci. Cent. Admin. Rep. H-97-10C, 44 p.
- NMFS (National Marine Fisheries Service). 2001b. Final Environmental Impact Statement; Fishery Management Plan Pelagic Fisheries of the Western Pacific Region. Prepared for National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southwest Region, Honolulu; prepared under contract to Research Corporation of the University of Hawaii by URS Corporation.
- WPRFMC (Western Pacific Regional Fishery Management Council). 1998. Magnuson-Stevens Act Definitions and Required Provisions. Amendment 6 to the Bottomfish and Seamount Groundfish Fishery Management Plan, Amendment 8 to the Pelagic Fisheries Management Plan, Amendment 10 to the Crustaceans Fishery Management Plan, and Amendment 4 to the Precious Corals Fishery Management Plan. Western Pacific Regional Fishery Management Council. Honolulu, Hawaii.
- WPRFMC. 2002. Magnuson-Stevens Act Definitions and Required Provisions. Bycatch Provisions. Supplements to Amendment 6 to the Bottomfish and Seamount Groundfish Fishery Management Plan, and Amendment 8 to the Pelagic Fishery Management Plan. Western Pacific Regional Fishery Management Council. Honolulu, Hawaii.
- WPRFMC. 2008. Amendment 15 to the Pelagics Fishery Management Plan: Measures to monitor and manage domestic Pacific harvests of pelagic squid. Western Pacific Regional Fishery Management Council. Honolulu, Hawaii 96813 USA.
- WPRFMC. 2009a. Fishery Ecosystem Plan for the American Samoa Archipelago. Western Pacific Fishery Management Council, Honolulu, Hawaii.
- WPRFMC. 2009b. Fishery Ecosystem Plan for the Hawaii Archipelago. Western Pacific Fishery Management Council, Honolulu, Hawaii.

- WPRFMC. 2009c. Fishery Ecosystem Plan for the Marianas Archipelago. Western Pacific Fishery Management Council, Honolulu, Hawai'i.
- WPRFMC. 2009d. Fishery Ecosystem Plan for the Pacific Remote Island Areas. Western Pacific Fishery Management Council, Honolulu, Hawai'i.
- WPRFMC. 2009e. Fishery Ecosystem Plan for Pacific Pelagic Fisheries of the Western Pacific Region. Western Pacific Fishery Management Council, Honolulu, Hawai'i.
- WPRFMC. 2021. Standardized Bycatch Reporting Methodology: Fishery Ecosystem Plan Consistency Review and Recommendations for Council Action. Western Pacific Regional Fishery Management Council. Honolulu, Hawaii 96813 USA. 56 pp. + Appendices.
- WPRFMC. 2022a. Annual Stock Assessment and Fishery Evaluation Report for the American Samoa Fishery Ecosystem Plan 2021. Remington, T., Fitchett, M., Ishizaki, A., DeMello, J. (Eds.) Western Pacific Regional Fishery Management Council. Honolulu, Hawaii 96813 USA. 140 pp. + Appendices.
- WPRFMC. 2022b. Annual Stock Assessment and Fishery Evaluation Report for the Hawaii Archipelago Fishery Ecosystem Plan 2021. Remington, T., Fitchett, M., Ishizaki, A., DeMello, J. (Eds.) Western Pacific Regional Fishery Management Council. Honolulu, Hawaii 96813 USA. 201 pp. + Appendices.
- WPRFMC. 2022c. Annual Stock Assessment and Fishery Evaluation Report for the Mariana Archipelago Fishery Ecosystem Plan 2021. Remington, T., Fitchett, M., Ishizaki, A., DeMello, J. (Eds.) Western Pacific Regional Fishery Management Council. Honolulu, Hawaii 96813 USA. 213 pp. + Appendices.
- WPRMFC. 2022d. Annual Stock Assessment and Fishery Evaluation Report for the Pacific Remote Island Areas Fishery Ecosystem Plan 2021. Remington, T., Fitchett, M., Ishizaki, A., DeMello, J. (Eds.) Western Pacific Regional Fishery Management Council. Honolulu, Hawaii 96813 USA. 77 pp. + Appendices.
- WPRMFC. 2022e. Annual Stock Assessment and Fishery Evaluation Report for the Pacific Island Pelagic Fishery Ecosystem Plan 2021. Remington, T., Fitchett, M., Ishizaki, A., DeMello, J. (Eds.) Western Pacific Regional Fishery Management Council. Honolulu, Hawaii 96813 USA. 390 pp. + Appendices.
- Wiley, J., Pardee, C. 2018. Post Release Mortality in the Hawaiian Kona Crab Fishery. Western Pacific Regional Fishery Management Council.

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 (**Table 9**) 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 DMWR 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, Magnuson–Stevens Act 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 ¹	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

¹ Pursuant to the ESA NMFS may require fishing vessels in fisheries identified through an annual determination process to carry Federal observers (72 FR 43176, August 3, 2007).

2009 Marianas FEP
§ 8.2.7 Bycatch Reporting

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 (**Table 10**) 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 Programs¹	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

¹ Pursuant to the ESA NMFS may require fishing vessels in fisheries identified through an annual determination process to carry Federal observers (72 FR 43176, August 3, 2007).

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).

2009 Hawaii FEP
§ 8.2.8 Bycatch Reporting

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 (**Table 11**) 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

Fishery	Observer programs¹	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

Fishery	Observer programs¹	NMFS Federal Logbook programs (EEZ waters)	HDAR State Logbook Programs (All waters)	Creel surveys (All waters)
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

¹ Pursuant to the ESA NMFS may require fishing vessels in fisheries identified through an annual determination process to carry Federal observers (72 FR 43176, August 3, 2007).

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 (**Table 12**) below.

Table 12: Bycatch Reporting Methodology for PRIA Demersal Fisheries

	Observer programs¹	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 commercially harvested coral reef taxa (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

¹ Pursuant to the ESA NMFS may require fishing vessels in fisheries identified through an annual determination process to carry Federal observers (72 FR 43176, August 3, 2007).

2009 Pelagic 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 Amendment 8 (Supplement) to the Pelagic 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 (**Table 13**) 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 Pelagic FMP.

Table 13: Bycatch Reporting Methodology for Pacific Pelagic Fisheries

Fishery	Observer programs¹	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

Fishery	Observer programs¹	Logbook programs	Creel surveys
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

¹ Pursuant to the ESA NMFS may require fishing vessels in fisheries identified through an annual determination process to carry Federal observers (72 FR 43176, August 3, 2007).