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**Annual Catch Limit and Accountability Measure for the Main Hawaiian Island Deep 7
Bottomfish Fishery for Fishing Years 2024-25 through 2026-27**

**Draft Supplemental Environmental Assessment
including a Regulatory Impact Review**

(RIN XXXX-XXXX)

July 17, 2024

Responsible Agency: National Oceanic and Atmospheric Administration (NOAA)
National Marine Fisheries Service (NMFS)
Pacific Islands Region Office (PIRO)

Responsible Official: Sarah Malloy
Acting Regional Administrator, PIRO
1845 Wasp Blvd., Bldg. 176
Honolulu, HI 96818
Tel: (808) 725-5000
Fax: (808) 725-5215

Responsible Council: Western Pacific Fishery Management Council (WPRFMC)
1164 Bishop St. Suite 1400 Honolulu, HI 96813
Tel: (808) 522-8220
Fax: (808) 522-8226

Supplements the Environmental Assessment: Final Environmental Assessment Annual Catch Limits and Accountability Measures for Main Hawaiian Islands Deep 7 Bottomfish Fisheries. May 22, 2019, prepared by WPRFMC and NMFS.

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

Timeline

July 17, 2024: Council and SFD complete full SEA and pass to Kate for NEPA review

July 31, 2024: Document due for NEPA Review (Kate)

August 7, 2024: Action team to address comments and pass to GC review

August 12, 2024: Document due for GC review (Sarah and Fred)

August 16, 2024: Deadline for AP Briefing Books

August 23, 2024: Deadline for SSC Briefing Books

August 30, 2024: Deadline for Council Briefing Books

Abstract

NMFS proposes to implement an Annual Catch Limit (ACL) and accountability measures (AM) for Deep 7 bottomfish in the U.S. Exclusive Economic Zone around the main Hawaiian Islands (MHI) for fishing years 2024–25, 2025–26 and 2026–27, as recommended by the Western Pacific Fishery Management Council (Council). The Council recommended an ACL of 493,000 lb and AMs for these fishing years in accordance with requirements of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), and with the approved processes in the Fishery Ecosystem Plan for the Hawaiian Archipelago (FEP). The recommended ACL is based on a 2024 benchmark stock assessment, and is similar to recent-year ACLs for the fishery. As an AM, to prevent the fishery from exceeding the ACL, NMFS would close the fishery in Federal waters for the remainder of the fishing year if NMFS projects the fishery will reach the ACL. Under a collaborative agreement, closure of the fishery in Federal waters would trigger a closure of state waters by the state of Hawaii. All reported commercial catch is counted towards the ACL, and a closure would apply to both commercial and non-commercial sectors of the fishery in both Federal and state waters. Another AM is a post-season correction to adjust the next year's ACL down by the amount of any overage of the ACL that occurs.

This Supplemental Environmental Assessment (SEA) supplements the analysis in the May 22, 2019, environmental assessment entitled “Annual Catch Limits and Accountability Measures for Main Hawaiian Islands Deep 7 Bottomfish Fisheries” (NMFS 2019) as well as the December 21, 2021, supplemental environmental assessment entitled “Annual Catch Limits and Accountability Measures for the Main Hawaiian Islands Deep 7 Bottomfish Fishery for Fishing Years 2021–22 through 2023–24” (NMFS 2021). Both of these prior analyses were prepared by NMFS and the Council, and found no significant impacts. This SEA supplements the analysis of the potential effects of the MHI Deep 7 bottomfish fishery on the biological resources, protected species, and socio-economic setting in light of new information.

Our analysis indicates that the proposed ACL and AMs are unlikely to change the MHI Deep 7 bottomfish fishery in terms of gear types used, areas fished, level of catch or effort, or effects on target or non-target stocks or protected species. The commercial fishery has landed an annual average of 186,444 lb of Deep 7 bottomfish in the past 5 years and has not been constrained by ACLs since 2009. The proposed action is intended to prevent overfishing and provide for continued sustainable harvest of the MHI Deep 7 bottomfish resource.

**Annual Catch Limit and Accountability Measure for the Main Hawaiian Island Deep 7
Bottomfish Fishery Fishing Year 2024-25 to 2026-27
Supplemental Environmental Assessment, including a Regulatory Impact Review**

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1 Introduction

1.1 Background and Overview of the Proposed Action

The National Marine Fisheries Service (NMFS) proposes to implement an annual catch limit (ACL) of 493,000 lb and both in-season and post-season AMs for the Deep 7 bottomfish fishery in the MHI for fishing year 2024–25 through 2026–27. These management measures are in accordance with recommendations from the Western Pacific Fishery Management Council (Council) at its 200th meeting in September 2024, and requirements of the Fishery Ecosystem Plan for the Hawaii Archipelago (FEP). The fishing year for the MHI Deep 7 bottomfish fishery begins on September 1 and ends on August 31.

NMFS previously prepared an environmental assessment (EA), "Final Environmental Assessment Annual Catch Limits and Accountability Measures for Main Hawaiian Islands Deep 7 Bottomfish Fisheries," which analyzed the environmental effects of a 492,000 lb Deep 7 bottomfish ACL and an in-season AM for fishing years 2018–19 through 2020–2021, (NMFS and WPRFMC 2019, herein referred to as 2019 EA), which was supplemented by an environmental assessment entitled "Supplemental Environmental Assessment Annual Catch Limits and Accountability Measures for the Main Hawaiian Islands Deep 7 Bottomfish Fishery for Fishing Years 2021–22 through 2023–24" (NMFS 2020, herein referred to as 2021 SEA). For the purposes of this document, references to the 2019 EA refers to the 2019 EA as supplemented by the 2021 SEA unless otherwise noted. In response to the 2024 MHI Deep 7 bottomfish benchmark stock assessment (Syslo et al. 2024) the Council recommended the 2024–25 through 2026–27 ACL and AM in a manner that is consistent with the process described in Section 2.1 of the 2019 EA.

The Council on Environmental Quality's (CEQ) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA) specify that agencies shall prepare supplements to NEPA documents if (1) the agency makes substantial changes to the proposed action that are relevant to environmental concerns; or (2) there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts (see 40 CFR 1502.9(d)(1)). Since completing the 2019 EA, NMFS has new information related to the status of the stock, performance of the fishery, recent consultations under the Endangered Species Act (ESA), and other information to consider. This SEA includes specific analysis to take into consideration the new information available since publication of the 2021 SEA.

1.2 Supplementing the 2019 EA

In 2019, NMFS and the Council prepared the 2019 EA to analyze the effects of specifying ACLs for the MHI Deep 7 bottomfish fishery for fishing years 2018–19, 2019–20, and 2020–21 (NMFS and WPRFMC 2019). The proposed action to implement an ACL and the identical AMs for fishing years 2024–25, 2025–26, and 2026–27 are part of the same ongoing management activity that was analyzed in the 2019 EA, and the purpose and need for the proposed action also remain unchanged.

Pursuant to National Standard 2 on the use of the best scientific information available, the Council used the 2024 MHI Deep 7 bottomfish benchmark stock assessment to inform the specification of the ACL for the next three fishing years at 39 percent risk of overfishing, which corresponds to an ACL of 493,000 lb. Pursuant to the FEP, the Council tracks the catch of Deep 7 bottomfish relative to the ACL to ensure consistency with the FEP, the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), and other applicable laws.

We prepared this SEA in accordance with the National Environmental Policy Act (NEPA; 42 U.S.C. 4321, et seq.) and related authorities, such as the CEQ’s Regulations for Implementing the Procedural Provisions of NEPA¹ (40 CFR Parts 1500 – 1508) and NOAA’s “Policy and Procedures for Compliance with the National Environmental Policy Act and Related Authorities Companion Manual for NOAA Administrative Order (NAO) 216-6A - Effective Jan 13, 2017” (Companion Manual). Under NOAA’s guidance in NAO 216-6A Companion Manual (section 5), “The decision maker must prepare a supplement to an EIS or EA if, after preparation of the document, but prior to completion of the action analyzed in the EIS or EA: a) there are substantial changes in the proposed action that are relevant to environmental concerns; or b) there are significant new circumstances or there is new information relevant to environmental issues bearing on the proposed action or its impacts.” NMFS may use existing NOAA environmental analyses to analyze effects of a proposed action when doing so will build on work that has already been done, to avoid redundancy and provide a coherent and logical record of the analytical and decision-making process.

NMFS determined that supplementation of the 2019 EA is appropriate to consider whether new information relevant to the proposed action will potentially have significant impacts. This new information includes the 2024 MHI Deep 7 bottomfish benchmark assessment (Syslo et al. 2024). NMFS also considers recent fishery performance in relation to the previous environmental effects analysis.

1.3 Preparers and Reviewers

Western Pacific Regional Fishery Management Council
Zach Yamada, Fishery Analyst, WPRFMC
Thomas Remington, Council Contractor, Lynker

NMFS PIRO Sustainable Fisheries Division
David O’Brien, Fishery Management Specialist, PIRO SFD
Pua Borges, Fishery Management Specialist, PIRO SFD
Kate Taylor, PIRO NEPA Coordinator

¹ This SEA applies CEQ’s Phase 2 NEPA regulations (effective July 1, 2024).

1.4 Proposed Action

The proposed action is to implement ACLs and AMs for the MHI Deep 7 bottomfish management unit species managed under the FEP for fishing years 2024–2025 through 2026–2027.

The FEP allows the Council to recommend and NMFS to implement an ACL for a maximum of four years. The ACL may not exceed the Acceptable Biological Catch (ABC) set by the Council’s Scientific and Statistical Committee (SSC), in accordance with implementing regulations for National Standard 1 of the Magnuson-Stevens Act (50 CFR 600.310). The Council’s ACL process is described in the FEP and includes methods by which the ACL may be reduced from the ABC based on management uncertainties through a social, economic, ecological and management (SEEM) analysis (WPRFMC 2024c).

1.5 Purpose and Need for Action

The purpose and need for this action is the same as described in the 2019 EA, section 1.3: The purpose of this action is to comply with the requirements of the Magnuson-Stevens Act and the FEP and regulations requiring the implementation of ACLs for the Deep 7 bottomfish stock complex and AMs for the fishery. The need for this action is to prevent overfishing and to provide for the long-term sustainability of the fishery resources while allowing fishery participants to continue to benefit from their utilization. AMs are needed to reduce the potential of exceeding an ACL and are used to correct or mitigate overages of the ACL should they occur.

1.6 Action Area

The action area is the same as described in the 2019 EA, section 1.4: The action area for this EA is waters where fishing for Deep 7 bottomfish occurs in State and Federal waters of the MHI. Bottomfish fishing occurs primarily in waters from 80 to 400 m deep from the Island of Hawaii to Niihau Island. Waters around islands northwest of Niihau are not part of the Action Area because bottomfish fishing is prohibited in Papahānaumokuākea Marine National Monument.

1.7 Decision to be Made

Following the Council’s recommendation and after considering public comments on the proposed action and alternatives considered, NMFS will implement an ACL and AM for the MHI Deep 7 bottomfish management unit species (BMUS) for the 2024–25, 2025–26, and 2026–27 fishing years. NMFS will also use the information in this SEA and the 2019 EA to consider the impacts of the proposed action and alternatives considered. Finally, the Regional Administrator will also use the information in this SEA and 2019 EA to make a determination about whether implementing the selected ACLs and AMs would be a major federal action with the potential to have a significant environmental impact that would require the preparation of an environmental impact statement.

1.8 Scope of the Analysis

The scope of the analysis in the 2019 EA was an evaluation of the environmental and socioeconomic effects of a ACL at 40 percent risk of overfishing (492,000 lb) and AMs

applicable to the MHI Deep 7 bottomfish fishery in fishing years 2018–2019 through 2020–2021. The proposed ACL and AM are substantially the same as described in Alternative 3 in the 2019 EA (EA, section 2.2.3). This SEA focuses on new information available since publication of the 2019 EA with bearing on effects of the proposed action of implementing the same ACL and AM in fishing years 2024–2025 through 2026–2027. New information and circumstances include:

1. New information about the Deep 7 bottomfish stock status in Hawaii. The analysis in the 2024 stock assessment (Syslo et al. 2024) evaluated effects on the environment of implementing various annual commercial harvest rates as ACLs through 2029. We consider whether the benchmark stock assessment represents new information that is likely to have significant impact on the proposed action or its impacts as analyzed in the 2021 SEA.
2. Recent performance of the MHI Deep 7 bottomfish fishery based on data through fishing year 2022–2023. We consider whether the new catch and economic information represents new information that is likely to have significant impact on the proposed action or its impacts as analyzed in the 2021 SEA.
3. Species listed under the ESA. Prior to the publication of the 2019 EA, NMFS listed two new species (oceanic whitetip shark and giant manta ray) as threatened and designated critical habitat for the insular false killer whale MHI distinct population segment (EA, section 3.2.2 and 4.2.2). On August 26, 2022, NMFS completed a new Biological Opinion (BiOp) that was initiated in response to the ESA listings of the oceanic whitetip shark, giant manta ray and chambered nautilus, and designation of MHI insular false killer whale critical habitat. This BiOp did not re-evaluate species previously consulted on because NMFS determined that reinitiating was not triggered for those species based on a Biological Evaluation dated February 1, 2019. In addition, on July 19, 2023, NMFS proposed to designate critical habitat for the threatened Central North Pacific DPS of green sea turtle (88 FR 46572). We consider whether there is new information that is relevant to the environmental issues bearing on the proposed action or its impacts as analyzed in the 2019 EA.
4. Marine mammals. The 2019 EA (section 3.2.2.2 and 4.2.2) describes that the fishery was classified as a Category III fishery (i.e., remote likelihood or no known incidental mortality and serious injury of marine mammals) in the NMFS List of Fisheries (LOF). On February 16, 2024, NMFS published a final LOF for 2024 under the Marine Mammal Protection Act (86 FR 3028). The information in the new listing does not change the information related to the MHI bottomfish fishery, which continues to be classified as a Category III fishery. The new LOF does not have bearing on the current proposed action and will not be discussed further.

1.9 Public Involvement

Council meetings and the development of the 2018–2021 ACL and AM alternatives are described in section 1.7 of the 2019 EA and section 1.10 of the 2021 SEA, which are

incorporated by reference. Briefly, the recommended ACLs and AMs were coordinated with the public at multiple SSC and Council meetings. All meetings were open to the public and advertised in Hawaii media as well as the *Federal Register* and on the Council’s website. On March 12, 2019 (84 FR 29294), and November 1, 2021 (87 FR 3045), NMFS published proposed ACLs and AMs for MHI Deep 7 bottomfish, and requested public review and comments on the proposed rule. NMFS received several comments on the proposed rule and on the draft EA, which generally supported the rule. NMFS considered public comments in finalizing the EA and in making its decision on the proposed actions, and responded to the comment in the final rules.

We provide the following updated information:

- At their 198th and 151st meetings, the Council and its SSC reviewed the new benchmark stock assessment for the MHI Deep 7 bottomfish with data through 2022 from the fishery-independent survey and 2022 for catch and effort data (Syslo et al. 2024) (88 FR 39, February 27, 2024). The benchmark stock assessment was subject to a tier-1 Western Pacific Stock Assessment Review (WPSAR) chaired by SSC member Steve Martell (88 FR 80694, November 20, 2023). The SSC and WPSAR panel determined that the updated assessment represents the best scientific information available (BSIA) and can be used to manage the MHI Deep-7 bottomfish fishery (Martell 2024). Further, the Council endorsed the SSC’s recommendation for staff to convene the P* (risk of overfishing) and Social, Economic, Ecological, and Management Uncertainty (SEEM) working groups to quantify the scientific and management uncertainty to develop options to specify ACLs and AMs for fishing years 2024–25 to 2026–27.
- At its 199th meeting on June 25, 2024, the Council considered and discussed issues relevant to specifying ACLs and AMs for the MHI Deep 7 bottomfish fishery, including the ABC recommendations from the SSC at its 152nd meeting held on June 11–12, 2024. At its 152nd meeting, the SSC recommended setting the ABCs based on the P* analysis of 40 percent risk of overfishing correlated to a catch level of 498,000 lb. At its 199th meeting, the Council accepted the SSC’s recommendation of setting the ABC based on the P* analysis reduction and took initial action on an ACL based on the P* and SEEM reduction scores corresponding to a risk of overfishing level of 39 percent at 493,000 lb. Further, the Council recommended continuing with the current AMs described previously (Section 1.4). Both the Council and SSC meetings were open to the public and advertised through notices in the *Federal Register* (88 FR 45849, May 24, 2024) and on the Council website. The public had an opportunity to comment at the meeting on the proposed ACL specifications and AMs. There were no public comment provided during this meeting.
- [Placeholder for the information about the September 2024 Council meeting and outcomes].

2 Alternatives Considered and Expected Fishery Outcomes

The alternatives considered in this SEA are substantially the same as the alternatives described in Section 2 of the 2019 EA. We incorporate Section 2 by reference, describe the content briefly below, and provide updates to applicable sections for the purposes of this SEA.

Section 2.1 of the 2019 EA, “Development of the Alternatives,” describes the Council’s process in developing alternatives. The stock assessment provides catch projections, including catch associated with a 50 percent risk of overfishing. This level is termed the overfishing limit, or OFL. Once the stock assessment has been subjected to independent review, a working group evaluates the scientific uncertainty associated with the assessment. This “P* (p-star) analysis” produces a factor relative to that uncertainty that serves as a buffer against overfishing. If accepted by the SSC, the OFL is reduced by P* factor, and the associated catch is the ABC. A second working group considered a SEEM analysis, which provides a further risk reduction that the Council may use to recommend an ACL and, optionally, an Annual Catch Target (ACT). For more detail, see “Scientific and Management Uncertainties” below.

The 2019 EA considered five management alternatives, including the proposed action and the No Action Alternative. Within this SEA, the five alternatives as presented in the 2019 EA were reduced to four alternatives, by combining Alternatives 4 and 5 in the 2019 EA to a single Alternative 4 here. Alternatives 4 and 5 in the 2019 EA were both implementing an ACL below the P* and SEEM values by 10 and 20 percent, respectively. Here, the Council considered a single alternative for any ACL below that suggested by the P* and SEEM analysis. Briefly, the four alternatives considered for this SEA were:

- Alternative 1. No action. Do not implement an ACL or AM.
- Alternative 2. Status quo baseline. Implement an ACL of 492,000 lb.
- Alternative 3. Implement an ACL based on P* and SEEM values.
- Alternative 4. Implement an ACL below P* and SEEM values.

The preferred alternative that the Council recommended and NMFS implemented in both 2019 and 2021 was Alternative 3. The Council developed the alternatives in accordance with the approved ACL mechanism established in the FEP and implementing Federal regulations at 50 CFR 665.4, and in consideration of the best available scientific, commercial, and other information about the fishery. Overall, the 2019 EA found that proposed action does not change the manner in which the fishery is conducted or the effects of the fishery on any resource. At its 199th meeting in June 2024, the Council recommended Alternative 3 as its preliminary preferred alternative for the proposed action.

Briefly, the No Action Alternative of the 2019 EA was based on not implementing an ACL for MHI Deep 7 bottomfish. This alternative would not be consistent with requirements of the Magnuson Stevens Act or the FEP, and it was included to evaluate the fishery absent management action. Alternative 2 was the status quo alternative based on the ACLs of 306,000 lb and 492,000 lb in the 2019 EA and 2021 SEA, respectively. The preferred alternative, Alternative 3, in the EA and in this SEA, utilizes the information from the existing P* and SEEM working group meetings that accounted for the scientific and management uncertainties following the ACL implementation process described in the FEP. This corresponds to a 40% risk of overfishing and a 492,000 lb ACL. The 2019 EA describes that Alternative 4 (420,000 lb) and Alternative 5 (336,000 lb) were not related to a particular need identified in the SEEM analysis, but provided additional options for considering precautionary management or in the event that the fishery exceeded the ACL and an overage adjustment was necessary. As AMs to prevent overfishing, Alternative 3 included an in-season monitoring AM to prevent the ACL from being

exceeded and close the commercial fishery in federal and state waters through co-management and a single year post-season overage adjustment AM if the fishery exceeds the ACL. Historically, the Council has recommended to set an annual catch target as an in-season AM as a mechanism to ensure the ACL is not reached or exceeded, but the fishery has historically caught less than 50% of the ACL and there has been higher compliance for reporting commercial catch through the CML. Therefore, the Council did not recommend setting an ACT for the MHI Deep 7 bottomfish fishery.

Alternative 3 in the 2019 EA considered an ACL of 492,000 lb associated with a 40% risk of overfishing. This previous Alternative 3 was based on the 2018 stock assessment updated and subsequent P* and SEEM working group analyses. Under the updated Alternative 3, an ACL based on the 2024 benchmark stock assessment and updated P* and SEEM analyses corresponds to a 39% risk of overfishing and would be set at 493,000 lb (refer to Table X below for more information). Even though this represents a 1,000 lb increase in ACL from the Alternative 3 in the 2019 EA, the risk of overfishing is reduced by 1% and therefore is a slightly more conservative option. However, because this does not appreciatively change the risk of overfishing or the ACL, we conclude that this is not a substantial change in the previously analyzed Alternative 3 for the purposes of this analysis.

Next, we consider whether the alternatives examined in the 2019 EA are a reasonable range of alternatives to meet the purpose and need of the action. Because the Council’s preliminary preferred alternative does not change the amount of the ACL or the AMs substantially from Alternative 3, the current proposed action is consistent with one of four action alternatives considered in the 2019 EA. Other alternatives include ACLs that are lower than that of Alternative 3 as well as the No Action Alternative and Status Quo Alternative.

Because the Council’s recommendation does not appreciatively change the risk of overfishing for the ACL or the AMs, the Council’s preliminary preferred alternative is not a substantial change and that the range of alternatives examined does not require supplementation. The features of the alternatives remain the same, and none of the alternatives are expected to substantially change the fishery relative to the baseline (Table 1).

Table 1: Summary of ACL alternatives and associated probability of overfishing (P*) percentile for MHI Deep 7 bottomfish, including MSY-based reference points

MHI Deep 7 Bottomfish			
MSY = 709,000 lb			
OFL = 545,000 lb			
ABC = 498,000 lb			
Alternatives	FY 2024-25	FY 2025-2026	FY 2026-2027

	ACL	P*	ACL	P*	ACL	P*
Alternative 1 (No Action)	No ACL	NA	No ACL	NA	No ACL	NA
Alternative 2 (Status Quo)	492,000	40	492,000	40	492,000	40
Alternative 3 (Use 2024 benchmark assessment and P* level from the P*/SEEM Analysis)	493,000	30-31	493,000	35	493,000	39
Alternative 4 (Use 2024 benchmark assessment and implement ACLs lower than P* and SEEM Analysis)	<493,000	<30-31	<493,000	<35	<493,000	<39

3 Existing and Updated Environmental Effects Analysis

We incorporate by reference the description of the affected environment in section 3 and the environmental effects of the alternatives in section 4 of the 2019 EA. We summarize the baseline information presented in the 2019 EA here and describe any new information and its relevance to the environmental effects analysis.

3.1 Physical Resources

Impacts on physical resources are described in sections 3.1 and 4.1 of the 2019 EA. Briefly, bottomfish fishing locations favored by fishermen in the MHI are primarily in waters 80 to 520 m deep due to the deep-water habitat of the target species. Given the small size of the vessels and the offshore nature of the fishery, bottomfish fishing is not known to affect air quality, noise, water quality, or view planes at current fishing levels. Fishing behavior and effort are not expected to change under any alternative in a manner that would result in effects on physical resources. Therefore, given the characteristics of the vessels in the fishery and the offshore nature of the fishing activity, none of the proposed alternatives would result in impacts to air quality, noise, water quality, view planes, or terrestrial resources.

3.2 Biological Resources

3.2.1 Target and Non-Target Stocks

Section 3.2.1 of the 2019 EA describes the stocks and stock status of MHI Deep 7 bottomfish. New information related to this is discussed in Section 3.2.1.1 of this SEA.

The MHI bottomfish fishery harvests an assemblage, or complex, of 14 species that includes nine snappers, four jacks (trevally), and a single species of grouper (EA, Table 1). The target species of the fishery, and the species of primary management concern, are six deep-water snappers and one grouper, the “Deep 7 bottomfish.” The prior stock assessments in 2018 (Langseth et al. 2018) and 2021 (Syslo et al. 2021) also indicated the stock is healthy, and biomass is higher than estimated in previous assessments. The 2019 EA also describes that catches have been well

below the Maximum Sustainable Yield (MSY) and OFL. The 2024 benchmark stock assessment was determined to be the BSIA for management by PIFSC and the Council’s SSC. The low harvest rate and high biomass relative to reference points indicate that the Deep 7 bottomfish stock is being fished sustainably.

In addition to the Deep 7 bottomfish, the bottomfish fishery also harvests four species of jacks and three snappers. One of these fish, uku (*Aprion virescens*), is a BMUS that is managed under a separate ACL and AM. Available information indicates that the Deep 7 fishery is target-specific, and the bycatch rate of non-BMUS is relatively low. NMFS does not have new information to indicate that the fishery has changed in this regard since the 2019 EA.

3.2.1.1 New information: Deep 7 Benchmark Stock Assessment

The 2024 benchmark stock assessment (Syslo et al. 2024) used the same Bayesian surplus-production modeling approach as the 2018 benchmark assessment (Langseth et al. 2018) within updated software. The model fit bottomfish catch and effort data from the commercial catch reports, added 2016–2022 fishery-dependent data, and added fishery-independent data from 2017–2022. The single species assessment for *Pristipomoides filamentosus* (opakapaka) was also updated with corresponding data. The 2024 benchmark stock assessment provided additional years of catch projections with risks of overfishing for various catch levels from 2025 to 2029.

Overall, the 2024 benchmark stock assessment shows Deep 7 bottomfish stock complex was not overfished or experiencing overfishing in 2023, consistent with out the outcomes of the previous benchmark stock assessment (Langseth et. al 2019) and stock assessment update (Syslo et al. 2021) indicating that the stock complex was not overfished or experiencing overfishing in 2015 or 2018, respectively (Table 2). Thus, new 2024 stock assessment also indicates that the stock complex is healthy, and the probabilities that it is overfished or experiencing overfishing is lower than the previous two assessments. Similarly, a single-species assessment for opakapaka indicated that the stock is healthy as of 2023, a similar outcome to the 2018 and 2021 assessments.

Table 2 compares reference point values from the previous 2018 benchmark stock assessment, the 2021 stock assessment update, and the new 2024 benchmark stock assessment. The Deep 7 bottomfish stock complex’s MSY, which represent the largest amount of fish that can be caught from the combined stocks each year without harming their overall health and ability to reproduce and grow, increased from the 2018 to the 2024 assessments. The 2018 MSY only pertained to reported catch through the State of Hawaii’s CML, while the MSY from the 2024 assessment represented total catch from both the commercial and non-commercial sectors. Relatedly, the estimated harvest rate (H) and the harvest rate at MSY increased since the 2021 assessment update, though the probability that overfishing is occurring decreased. The estimated biomass for the Deep 7 complex exhibited a gradual long-term decline and decreased by 10.57 million lb based on the 2024 benchmark assessment. However, the biomass at MSY (B_{MSY}) and B/B_{MSY} increased, and thus, the probability that the stock is overfished decreased. The decrease in estimated biomass and increase in productivity were the result of numerous improvements in the data preparation and modeling approaches, but also influenced by the declining trend in data from the fishery independent survey. The OFL in the terminal year decreased by 90,000 lb, indicating that fewer fish would need to be caught for the stock complex to be overfished.

Table 2: Comparative table of the reference points between the 2018 benchmark stock assessment, the 2021 assessment update, and the 2024 benchmark stock assessment

Parameter	2018	2021	2024
MSY	509,000 ($\pm 233,000$) lb	473,000 ($\pm 225,000$) lb	709,000 ($\pm 207,000$) lb
H	In 2015 = 4%	In 2018 = 3%	In 2023 = 4%
H_{MSY}	6.9% ($\pm 2.6\%$)	6.8% ($\pm 2.6\%$)	11.2% ($\pm 5.1\%$)
H/H_{MSY}	In 2015 = 0.51	In 2018 = 0.37	In 2023 = 0.34
Prob. H/H_{MSY}>1	0.17 (no overfishing)	0.11 (no overfishing)	0.01 (no overfishing)
B	20.03 million lb	21.88 million lb	11.31 million lb
B_{MSY}	15.4 million (± 4.9 million) lb	15.5 million (± 5 million) lb	6.54 million (± 2.5 million) lb
B/B_{MSY}	1.31	1.43	1.71
Prob. B/B_{MSY}<0.844	0.16 (not overfished)	0.13 (not overfished)	0.01 (not overfished)

Sources: Langseth et al. (2018); Syslo et al. (2021); Syslo et al. (2024).

3.2.1.2 New information: 2024 P* and SEEM Working Group Analyses

At its 151st meeting, the SSC deemed the 2024 benchmark assessment of the MHI Deep 7 bottomfish as BSIA for stock status determination and the setting of harvest limits. At its 198th meeting, the Council further directed staff to convene the P* (i.e., risk of overfishing) and SEEM (i.e., Social, Economic, Ecological, and Management Uncertainty) working groups to determine qualitative and quantitative measures of uncertainty for the Deep 7 fishery and develop options to specify ACLs.

Updated Scientific and Management Uncertainties

Scientific Uncertainties

The Omnibus Amendment that established the ACL specification process requires the Council's SSC to review a stock's scientific information and assign it a tier according to the ABC control rule established in the FEP (WPRFMC and NMFS 2011). The Deep 7 bottomfish stock complex is considered a tier 1 stock, and therefore, a P* analysis is used to quantify the scientific uncertainty in determining the appropriate risk level at which to set the ABC. The SSC may recommend an ABC that differs from the result of the control rule calculation based on factors such as data uncertainty, recruitment variability, declining trends in population variables, and other factors determined relevant by the SSC, but the SSC must explain its rationale. Refer to Section 2.1 of the 2019 EA for more information on the ABC specification process and Section 3.2.1.1 for information on P* analysis factors.

P* dimensions and corresponding scores by which the OFL is reduced to determine the ABC for the three most recent stock assessments are provided in Table 3. The 2024 benchmark stock assessment did use new information that changes the score for the Assessment Information dimension. The new assessment added six years of fishery-dependent and independent data and updated life history information. Thus, the Assessment Information dimension score determined

to be 0.7. The Uncertainty Characterization score also changed according to the new benchmark assessment. At the 2023 MHI Deep 7 WPSAR, the panel discussed how there was more variability in prior distributions and recommended that the retrospective analysis be accounted for in the P* analysis, which is now represented by a 5.0 percent reduction. For Stock Status, the Deep 7 complex was determined to be not overfished or experiencing overfishing, resulting in a reduction score of 0.0. The previous score of 1.0 for this dimension was due to portions of the time series showing the stock complex to be experiencing overfishing, which was not apparent in the results of the 2024 assessment. For the Productivity dimension, there was new life history information incorporated in the assessment update, and the level of fishery Susceptibility remained the same due to the catch trend was decreasing over time; these factors resulted in a reduction score of 4.4 (WPRFMC 2024b).

Table 3: Comparative table of the P* scores for the 2018, 2021, and 2024 ABC setting.

P* Dimensions and Criteria	2018	2021	2024
Assessment Information	-0.7	No change	-0.7
<i>Reliable catch history</i>	<i>0.1 : unreported catch</i>	<i>Updated to 2018</i>	<i>0.5</i>
<i>Standardized CPUE</i>	<i>0.0 : improved standardization</i>	<i>Updated to 2018</i>	<i>0.0</i>
<i>Species specific data</i>	<i>0.5 : opakapaka assessment</i>	<i>No change</i>	<i>0.5</i>
<i>All sources of mortality accounted for</i>	<i>0.5 : bycatch unaccounted for</i>	<i>No change</i>	<i>0.5</i>
<i>Fishery independent data</i>	<i>0.0 : MOUSS data included</i>	<i>Updated to 2020</i>	<i>0</i>
<i>Tagging data</i>	<i>1.0 : not included</i>	<i>No change</i>	<i>1.0</i>
<i>Spatial analysis</i>	<i>0.5 : improved spatial consideration</i>	<i>No change</i>	<i>0</i>
Uncertainty Characterization	-1.5 : narrowed to 2 uncertainties	No change	-5.0 : retrospective bias not carried forward
Stock Status	-1.0 : species complex	No change	-0.0 : No BRFA's
Productivity/Susceptibility	-4.35 : same P and S	No change	-4.4 : Updated Life History Info
TOTAL BUFFER	-7.59 ≈ 8.0		-10.1 ≈ 10

Social, Economic, Ecological, and Management Uncertainty

The SEEM analysis resulted in a reduction score of 0.0 from the Social, Ecological, and Economic Uncertainty dimensions, and the Management Uncertainty reduction was quantified at 1.0 percent (Table 4). For the Monitoring dimension, although there is mandatory licensing and reporting for CML holders, there remains uncertainty surrounding the estimates of non-commercial and unreported catch. Under Management Uncertainty, a reduction of 1.0 was determined for monitoring since there is a high compliance rate for commercial reporting, and the working group also considered the removal of the remaining bottomfish restricted fishing areas (BRFAs) around the MHI. Thus, the total SEEM reduction score was 1.0 percent (WPRFMC 2024c). Data from the Hawaii annual SAFE report showed a slight decrease in the

number of licenses reporting Deep 7 bottomfish over the last five years (Figure 2; WPRFMC 2024a).

Table 4: Comparative table of the SEEM scores for the 2018, 2021, and 2024 ACL setting

SEEM Dimensions	2018	2021	2024
Social	<i>0.0 : no reduction</i>	No change	No change
Economic	<i>0.0 : no reduction</i>	No change	No change
Ecological	<i>0.0 : related to BRFA</i>	<i>4 BRFAs opened</i>	<i>No change</i>
Management & Monitoring	<i>-2.0 : increase in CML fee; new fishing method</i>	<i>Slight decrease in license reporting Deep 7</i>	<i>-1.0 : high compliance with CML reporting</i>
TOTAL BUFFER	-2.0		-1.0

Table 5 shows the risk of overfishing and catch associated with the ABC and ACL resulting from the P* and SEEM working group analyses after each of the recent stock assessments. For the 2024 assessment, there is a slight decrease in the ABC and ACL due to the slight reduction in the recommended level of risk of overfishing. The total scores from the P* analysis were deducted by the SSC from the OFL (50%), as required under NS1 guidelines to set the ABC. The ACL may be further reduced based on the SEEM analysis, for a combined reduction of 11 percent.

Table 5: Comparative table of the harvest limits and the corresponding risk of overfishing from the P* and SEEM analyses.

Parameter	2018	2021	2024
OFL (terminal fishing year)	In 2021-22 = 558,000 lb	In 2024-25 = 556,000 lb	In 2026-27 = 545,000 lb
Risk of Overfishing after P* Reduction	42%	42%	40% (50% minus P* score of 10)
ABC	508,000 lb	510,000 lb	498,000 lb
Risk of Overfishing after SEEM Reduction	40%	40%	39% (50% minus combined P* and SEEM score of 11)
ACL	492,000 lb	496,000 lb	493,000 lb

Sources: Langseth et al. 2018; Syslo et al 2021; Syslo et al 2024 WPRFMC 2024b, 2024c

3.2.1.3 New information: Fishery Performance

Table 6 shows the Deep 7 bottomfish catch in the most recent eight years. The catch is generally decreasing over time, with the average of the last three years at 183,531 lb. This corresponds to 37.3% of the current ACL. In the most recently completed fishing year of 2022–23, the fishery had a reported catch of 197,158 pounds of Deep 7 BMUS. This corresponds to approximately 40.1% of the corresponding ACL of 492,000 lb. The current ACL is likely not functionally constraining the fishery.

Table 6: Total lb of Deep 7 bottomfish landed from fishing years 2015–2016 to 2022–2023

Fishing Year	Licenses	Trips	Total Reported Catch (lb)
2015–2016	372	2,348	260,732
2016–2017	340	2,351	237,879
2017–2018	341	2,169	236,119
2018–2019	318	2,023	181,125
2019–2020	334	1,843	161,713
2020–2021	320	2,092	164,171
2021–2022	380	2,117	189,264
2022–2023	359	2,050	197,158
Three-Year Average	353	2,086	183,531

Source: WPRFMC (2024a).

Figure 1 presents the cumulative catch of Deep 7 bottomfish in fishing year 2020–21. The fishery performance in the current fishing year is slower compared to the same point in time in the previous fishing year.

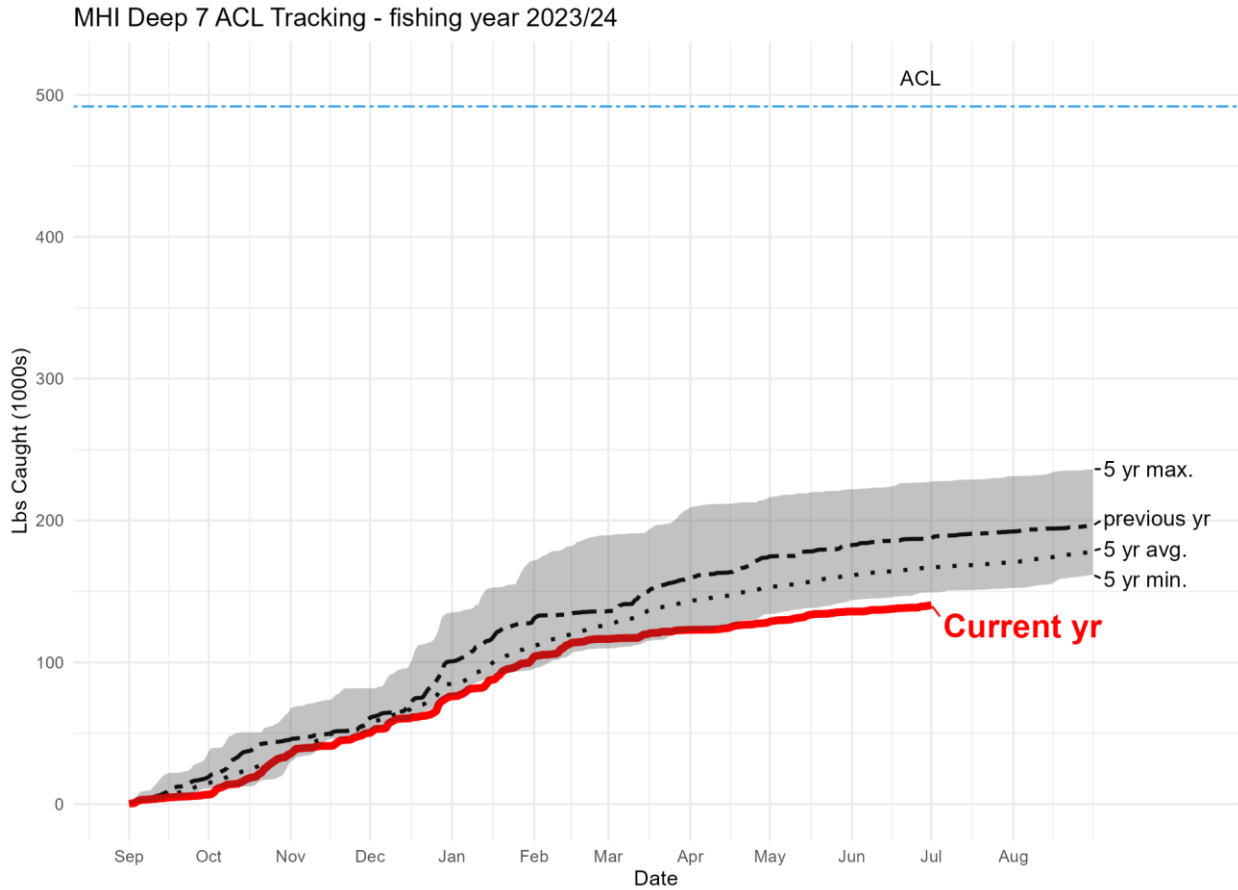


Figure 1: Cumulative catch curve of Deep 7 bottomfish in fishing year 2023-2024 relative to the ACL of 492,000 lb. (Source: Helyer, J. Aug. 3, 2024 Commercial MHI Deep 7 Bottomfish Update. Hawaii Division of Aquatic Resources)

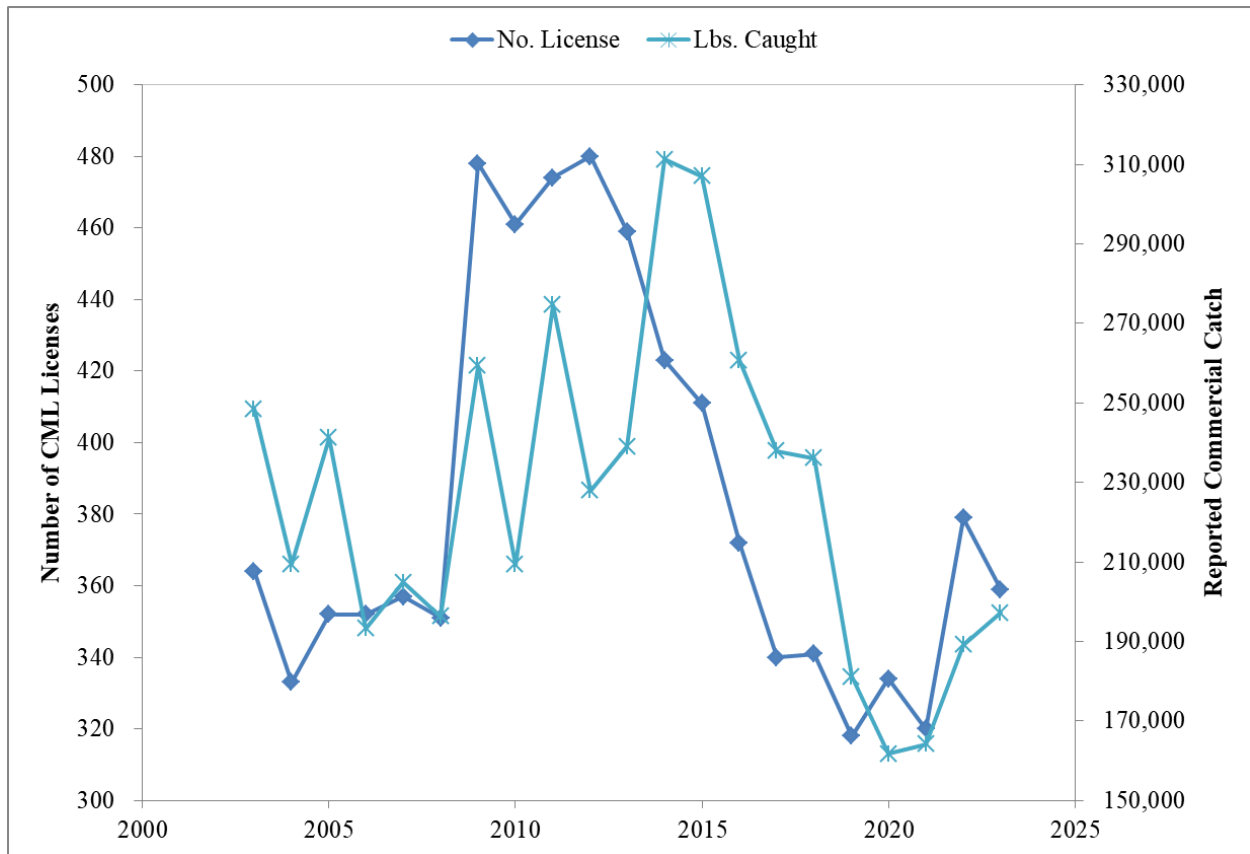


Figure 2: Number of Commercial Marine License holders reporting catch of Deep 7 bottomfish and annual reported landings of Deep 7 species in the Main Hawaiian Islands from 2003 to 2023

3.2.1.4 Supplemental Analysis Using the New Fishery Information

Compared to Alternative 3 in the 2019 EA, NMFS would implement an ACL at a lower risk of overfishing of 39% at 493,000 lb of MHI Deep 7 bottomfish for the 2024–25, 2025–26, and 2026–27 fishing years based on the Council’s recommendation at the 199th meeting. Based on the probability of overfishing projections contained in the 2024 benchmark stock assessment (Syslo et al. 2024), an ACL of 493,000 lb is associated with a 30–31 percent probability of overfishing in fishing year 2024–25, a 35 percent probability of overfishing in fishing year 2025–26 assuming two years of identical catch, and a 39 percent probability of overfishing in fishing year 2026–27 assuming three years of identical catch (Table 17 in Syslo et al. 2024). The probability of the stock being overfished in 2027 after three years of catch of 493,000 lb is 2 percent. As noted above, the SSC recommended the ABC at a 40 percent risk of overfishing based on the benchmark assessment and the P* analysis. This ABC is associated with a biological catch of 498,000 lb. There was an update to the management uncertainty from the SEEM analysis and the Council recommended utilizing the suggested reduction score resulting a 39 percent risk of overfishing. The SEEM analysis accounted for emerging non-commercial fisheries for the Deep 7 bottomfish and emerging online sales of fish that create uncertainties in the documentation of catch from the State of Hawaii CML Reporting System, which is the

primary source of data used in stock assessments and catch tracking. The result was a combined 11 percent buffer from OFL in setting the ACL.

Based on the 2024 benchmark stock assessment, the MSY is estimated to be 709,000 lb, which is more than the previous MSY estimate of 473,000 lb reported in the 2021 stock assessment update (Table 1; Syslo et al. 2021). The increase between the 2019 and 2024 stock assessments was because the MSY from the 2019 assessment only pertained to reported catch, while the 2024 estimate was for total catch of commercial and non-commercial catch. The 2024 stock assessment update estimated an OFL of 556,000 lb, which is slightly less than the OFL estimate in the 2018 benchmark stock assessment of 558,000 lb. Using this new benchmark stock assessment information conforms to the National Standard 2 of the Magnuson-Stevens Act, which requires the use of the best scientific information available for management. This alternative also utilizes the information from the 2024 P* and SEEM working group meetings that accounted for the scientific and management uncertainties following the ACL implementation process described in the FEP.

The preliminary preferred alternative is more precautionary than the same Alternative 3 in the 2019 EA. Retaining the 493,000 pound ACL reduces the risk of overfishing levels in each of the fishing years.

Expected Fishery Outcome

Under Alternative 3, an ACL of 493,000 lb will have a similar expected fishery outcome compared to Alternative 3 in the 2019 EA. The fishery could catch up to 493,000 lb of Deep 7 bottomfish, which is appreciably higher than the ACL as in the 2019 EA. The OFL in the 2024 benchmark assessment (545,000 lb) is lower than the OFL from the previous assessment (556,000 lb) benchmark by 11,000 lb, but both of these levels are substantially more than the ACL. This change resulted in lower allowable catch levels compared to the previous assessment.

The fishery is not likely to reach the ACL of 493,000 lb if the fishery performance is similar to fishery performance over the past 5 years. The average catch in the past three years was 183,531 lb (Table 5). If the fishery performs close to the highest recent catch of 260,732 lb during the 2015–16 fishing year, the fishery would remain open throughout each of the next 3 years. The ACL would not constrain the fishery or result in a race to fish. Alternative 3 is not expected to result in changes in the conduct of the fishery over recent years, including gear types used, areas fished, level of catch or effort, or effects on target or non-target stocks or protected species because the fishery has not been constrained by catch limits in recent years and would not be under the proposed ACL.

If the fishery were to attain the ACL of 493,000 pounds in an individual fishing year, NMFS would implement a closure of the commercial and non-commercial fisheries for MHI Deep 7 bottomfish in Federal waters as an AM. If this occurs, the State of Hawaii has the authority to implement a complementary fishery closure in State waters, and is likely to, as it has in the past. The in-season AM of a fishery closure would keep total reported catch of MHI Deep 7 bottomfish well below the OFL of 545,000 lb and prevent overfishing.

Because State and Federal laws require fishermen to report on a per-trip basis, management uncertainty (i.e., late reporting) is unlikely to cause the fishery to exceed the ACL of 493,000 lb. Thus, an overage adjustment AM is not likely to be necessary. However, if the fishery were to exceed the ACL in any fishing year, NMFS would reduce the ACL in the next fishing year by the amount of the overage. Based on recent fishing performance over the last 3 years, it is not expected that the fishery would change such that this ACL alternative would be exceeded.

3.2.2 Protected Species

Section 3.2.2 of the 2019 EA, “Protected Species,” describes the baseline with respect to potential interactions between the MHI Deep 7 bottomfish fishery and protected species including marine mammals, sea turtles, and seabirds, and this information is incorporated by reference and summarized there. The section generally describes ESA requirements and consultations, ESA-listed species with the potential to interact with vessels in the fishery (Table 9, in the 2019 EA), valid BiOps, and ongoing Section 7 consultations for the fishery. The section continues with information about the Marine Mammal Protection Act (MMPA) including the potential for interactions with the fishery.

Following are highlights of other information incorporated by reference from the 2019 EA and updated information that support this SEA:

- **Sea Turtles:** The EA provides basic information about ESA-listed sea turtles that the fishery may interact with and the determination of the 2008 BiOp, which concluded that the bottomfish fishery is not likely to jeopardize the existence of green sea turtle. The fishery is not likely to adversely affect other sea turtle species.
- **MHI insular false killer whale (IFKW) distinct population segment and critical habitat:** In a modification to the 2008 BiOp dated August 7, 2013, NMFS determined that commercial and non-commercial bottomfish fisheries in the MHI may affect, but are not likely to adversely affect MHI insular false killer whales (NMFS 2013). On February 1, 2019, NMFS reinitiated consultation under ESA to determine whether bottomfish fishing activities are likely to adversely modify MHI IFKW critical habitat, as required by 50 CFR 402.16.
- **Hawaiian monk seal:** The 2008 BiOp found that bottomfish fishing activities are not likely to adversely affect any other ESA-listed marine species that may be found in federal waters of the MHI. On August 21, 2015, (80 FR 50925) NMFS published a final rule to designate areas in the MHI as monk seal critical habitat. As a result of the final rule designating monk seal critical habitat, NMFS initiated consultation on the continuation of the bottomfish fishery in the Hawaiian archipelago. In a memo dated March 1, 2016, the consultation concluded with NMFS concurring that the fishery is not likely to adversely affect the designated Hawaiian monk seal critical habitat because effects of the fishery are expected to be discountable or insignificant.
- **Oceanic whitetip shark:** On January 30, 2018, NMFS published a final rule listing oceanic whitetip sharks as threatened species under the ESA (83 FR 4153). Logbooks and voluntary reports have documented rare interactions with this species by the fishery. On February 1, 2019, NMFS reinitiated consultation under ESA to determine whether fishing activities are likely to adversely affect this species, as required by 50 CFR 402.16.

- Giant manta ray: On January 22, 2018, NMFS published a final rule listing giant manta rays as threatened species under the ESA (83 FR 2916). There are no recorded interactions with the fishery and giant manta rays, and NMFS expects the bottomfish fishery to have discountable or insignificant effects on the giant manta ray population. On February 1, 2019, NMFS reinitiated consultation under ESA to determine whether fishing activities are likely to adversely affect this species, as required by 50 CFR 402.16.
- Seabirds: Most of the seabirds found in Hawaii forage far from the islands and are unlikely to interact with the bottomfish fishery because of the methods used to deploy and retrieve fishing tackle. There have been no reports of interactions between the Hawaii bottomfish fishery and seabirds; therefore, it is unlikely that the fishery, as currently conducted under the recommended action, would affect seabirds. There was no ESA new listing for seabirds since the 2019 EA.

3.2.2.1 New information and updated analysis: Protected Species Interactions

The following is new information about protected species since the 2019 EA was completed.

- On August 26, 2022, NMFS published a biological opinion (NMFS 2022) finding And determined that the MHI bottomfish fishery is not likely to adversely affect giant manta rays, chambered nautilus, or MHI insular false killer whale critical habitat. For oceanic whitetip sharks, NMFS determined that the continued operation of MHI bottomfish activities is likely to adversely affect the threatened sharks but are not likely to jeopardize their continued existence. The MHI bottomfish fishery does incidentally take oceanic whitetip sharks, and to monitor the amount of take, NMFS established an Incidental Take Statement (ITS) of two interactions over any five consecutive calendar years. If the ITS is exceeded, NMFS will reinitiate formal consultation.
- The proposed action under consideration would not change the manner in which the fishery operates with respect to areas fished, gear used, or methods employed, so interactions with protected species are not anticipated to change in frequency or intensity from those analyzed in the 2021 SEA. None of the alternatives under consideration are expected to change the fishery in a way that would result in new or additional effects, so effects on protected resources are expected to continue to be insignificant under all management alternatives.

3.2.3 Habitats and Vulnerable Ecosystems

Information on habitats and vulnerable ecosystems is found in sections 3.2.3 and 4.2.3 of the 2019 EA, and is incorporated here by reference and summarized briefly. The FEP defines essential fish habitat (EFH) and habitat areas of particular concern (HAPC) for BMUS. Scientific surveys indicate that bottomfish fishing operations do not have adverse impacts to the habitat. To prevent and minimize adverse bottomfish fishing impacts to the environment, the FEP prohibits the use of explosives, poisons, bottom trawl, and other non-selective and destructive fishing gear. None of the alternatives under consideration would change these regulations. Considering the lack of adverse impacts to bottomfish habitat from focused underwater surveys, alterations to bottomfish EFH and HAPC are not likely under any of the Alternatives under consideration. No new information is available that changes the circumstances relative to the analysis in the 2019 EA.

3.2.4 Socio-economic Setting

With respect to the fishing community, we have no new information and incorporate that section by reference (2019 EA, section 4.3). New information is available on commercial and non-commercial participation and ex-vessel revenue, and is summarized here. In the fishery, there is a continuum from fully non-commercial to fully commercial fishermen, so the 2019 EA summarized economic potential across this range (e.g., section 4.3.1.3 and Table 21 in the 2019 EA). This information is supplemented based on updated information for price per lb of Deep 7 bottomfish (WPRFMC 2024a). The economic potential for the preliminary preferred alternative (i.e., resulting in an ACL of 493,000 lb) remains the highest of all the alternatives in the previous 2019 EA. Assuming that the full ACL were to be caught, and fishermen sell 91 percent of their catch for \$10.11 per lb as observed in 2023 (WPRFMC 2024a), the sold component of the catch would be 448,630 lb, generating a fleet-wide revenue of \$4,535,649.30 per year. Distributed evenly across the 359 CML holders observed in 2023, each fisher could expect to sell nearly 1,250 lb of fish that would generate revenue of \$12,634 per year. As in the 2019 EA, this alternative provides the highest potential for economic revenue. Compared to the 2019 EA, the new information on average price per pound for the Deep 7 bottomfish in 2023 is higher by \$2.88, therefore the revenues calculated are higher. Overall effects to the fishing community are not expected to change substantially from the analysis in the 2019 EA.

3.3 Management setting

Regarding the management setting in section 3.4 and section 4.5 of the 2019 EA, there is no new information available and we incorporate that section by reference. The section describes ongoing management of the fishery in recent years, which includes management of the Deep 7 catch using ACLs and AMs. This section accurately describes administrative processes used by NMFS and the Council that would continue under either alternative. There are no changes since the 2019 EA or in the proposed action that affect the analysis of potential effects of the alternatives on the management setting in section 3.4 and 4.4 of the 2019 EA.

The recommended action is a continuation of ongoing and coordinated management efforts to maintain a sustainable bottomfish fishery in the MHI through implementation of ACL-based on the best-scientific information available. The FEP plan team shall continue to prepare an annual report on the performance of the MHI bottomfish fisheries (commercial and non-commercial fishing sectors) by June 30 of each year. Additionally, all other regulations implemented by other federal agencies and the State of Hawaii would continue to apply to bottomfish fishing vessels operating in the EEZ. The State would continue to manage bottomfish catches by requiring a CML/CMVL and reports, imposing a bag limit of 5 fish for non-commercial fishermen, and registration of bottomfish vessels. Given the recent catch history (Table 6), the fishery is unlikely to reach the recommended ACL.

3.4 Cumulative Effects

This section supplements the cumulative impacts analysis in section 4.6 of the 2019 EA. Past actions and other present actions are included in the EA and in the description of the affected environment in this SEA. We have no new information with bearing on the “Potential

Cumulative Effects” as analyzed in section 4.6 of the 2019 EA. Information we incorporate from section 4.6 of the 2019 EA includes:

- Section 4.6.1, describes potential effects of the recommended action with respect to physical resources. Given the recommended action is similar to the 2019 EA, an ACL of 493,000 lb will not change the fishing operation and will continue to not have adverse effects on air, noise, water quality, view planes, or terrestrial resources. The Deep 7 catch (Table 5) in the last five years has been decreasing, further reducing the potential effects on physical resources.
- Section 4.6.2, describes the potential effects on the biological resources, both to target and non-target species. The Deep 7 and non-Deep 7 species (primarily uku) continue to be not overfished and not subject to overfishing based on the most recent assessments (Syslo et al. 2024; Nadon et al. 2020). Continued management of the fishery using the recommended 493,000 lb ACL and AMs for 2024–25, 2025–26, and 2026–27 is still not expected to result in large and adverse effect to the stock. The probability of the Deep 7 stock to become overfished and the probability of the Deep 7 stock to be subject to overfishing remain low (1% and 1%, respectively; Syslo et al. 2024). The probability of the uku stock to become overfished and the probability of the uku to be subject to overfishing are within the sustainable threshold (2.7% and 0.57%, respectively; Nadon et al. 2020), and would not be affected by the implementation of the recommended ACL for MHI Deep 7 bottomfish.
- The recommended action will not change the nature of the Deep 7 fishery as it relates to bycatch and protected species interaction. The bycatch will remain low. Interaction with protected species will also remain very low. The fishery would continue to be authorized and conducted in accordance with Section 7 of the ESA and the MMPA as described in Sections 3.2.2 and 4.2.2 of the 2019 EA. The recommended action will continue to not likely have large adverse effects on the survival or recovery of any listed species largely because the fishery has low levels of interactions with listed species; because fishery participants release protected species that are caught on hooks, and because vessel collisions with sea turtles are far below levels that would jeopardize survival and recovery. NMFS’ analysis of effects on listed species took into consideration actions by others and NMFS that affect the same species. In general, continued management of the fishery under the full suite of management measures, including the proposed ACL and AMs for the next several years, would not change the fishery in any way that is likely to have the potential for large and adverse cumulative effects on listed species.
- Section 4.6.3, describes the potential effects of the recommended action with respect to the socio-economic setting. The recommended ACL of 493,000 lb is essentially the same as the ACL analyzed in the 2019 EA. This ACL will continue to provide the highest harvest, potential revenue, and continuous supply of Deep 7 bottomfish for the fishing communities. Because social and economic considerations have been incorporated into the setting of the ACLs (Section 1.1.1 of the 2019 EA), the recommended ACL is expected to have no cumulative effects to the socio-economic setting.
- Section 4.6.4, describes the potential effects of the recommended action with respect to management setting. The recommended ACL of 493,000 lb to be implemented in fishing year 2024–25, 2025–26, and 2026–26 is essentially the same as the ACL in the previous three fishing years and therefore will not change the ongoing management environment, and will not add a cumulative effect to the management setting in a substantial way

(section 4.4 of the 2019 EA). This recommended ACL will not result in substantial cumulative adverse effects on the cost of administering the fishery. Because of the lack of large changes in management, none of the alternatives has the potential to have cumulative effects to fishery participants in terms of complying with the fishery requirements.

- Section 4.6.5, describes other considerations like climate change. The section describes the potential effect of climate change on the physical environment, stock productivity, habitat availability, species distribution etc. The Council's recommended action is not expected to be adversely affected by climate change. Recent catches relative to MSY and OFL estimates and a 2024 stock assessment update that considered the condition of the stock relative to fishing over time helped to inform the development of the ACLs and AMs. Monitoring would continue, and, if monitoring shows overfishing is occurring, ACLs and other fishery management provisions could be adjusted in the future.

3.5 Summary Table of Effects of Alternatives

We incorporate Table 24 from the 2019 EA in its entirety. The table summarizes potential effects of the five alternatives, which have not changed in the proposed action.

4 References

We incorporate section 6 from the 2019 EA in its entirety and add the following citations:

Hospital, J., B. Schumacher, A. Ayers, K. Leong, C. Severance. 2019. A Structure and Process for Considering Social, Economic, Ecological, and Management Uncertainty Information in Setting of Annual Catch Limits: SEEM*. Pacific Islands Fisheries Science Center Internal Report IR-19-011.

Martell, S. 2024. Western Pacific Stock Assessment Review of the 2024 Benchmark Stock Assessment for the Main Hawaiian Islands Deep 7 Bottomfish Complex in 2024 with Catch Projections Through 2029. Western Pacific Regional Fishery Management Council.

Nadon MO, Sculley M, Carvalho F. 2020. Stock assessment of uku (*Aprion virescens*) in Hawaii, 2020. U.S. Dept. of Commerce, NOAA Technical Memorandum NOAA-TM-NMFS-PIFSC-100, 120 p. doi:10.25923/57nb-8138

NMFS. 2022. Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion. Reinitiation of Endangered Species Act Section 7 consultation on the bottomfish fisheries of American Samoa, Guam, the Northern Mariana Islands, and the Main Hawaiian Islands as managed under the American Samoa, Mariana Archipelago, and Hawaii Archipelago Fishery Ecosystem Plans. National Marine Fisheries Service, Pacific Islands Region, Protected Resources Division. PIRO-2019-01148.

NMFS and WPRFMC 2019. Final Environmental Assessment Annual Catch Limits and Accountability Measures for Main Hawaiian Islands Deep 7 Bottomfish Fisheries (RIN 0648-BI54). 114pp.

Syslo J, Brodziak J, Carvalho F. 2021. Stock Assessment Update for the Main Hawaiian Islands Deep-7 Bottomfish Complex in 2021, with Catch Projections through 2025. NOAA Tech. Memo. NMFS-PIFSC -###, ## p.

Syslo J., Oshima M., Ma H., Ducharme-Barth N., Nadon M., Carvalho, F. 2024. Benchmark stock assessment for the main Hawaiian Islands Deep 7 bottomfish complex in 2024 with catch projections through 2029. Department of Commerce. NOAA Stock Assessment Report. NMFS-PIFSC-##.

WPRFMC, 2024a. Annual Stock Assessment and Fishery Evaluation Report for the Hawaii Archipelago Fishery Ecosystem Plan 2023. Remington T, DeMello J, Ishizaki A (Eds.). Honolulu: Western Pacific Regional Fishery Management Council.

WPRFMC, 2024b. Main Hawaiian Island Deep 7 P* Working Group Report. Western Pacific Regional Fishery Management Council. Honolulu, Hawaii 96813

WPRFMC, 2024c. Main Hawaiian Island Deep 7 SEEM Working Group Report. Western Pacific Regional Fishery Management Council. Honolulu, Hawaii 96813

Appendix A. Regulatory Impact Review

Appendix B. Final Environmental Assessment Annual Catch Limits and Accountability Measures for Main Hawaiian Islands Deep 7 Bottomfish Fisheries. May 22, 2019