INITIAL REVIEW DRAFT

Amendment XX to the Pacific Coast Groundfish Fishery Management Plan, 2027-28 Harvest Specifications, and Management Measures

Impact Analysis and Magnuson-Stevens Fishery Conservation and Management Act Analysis

Preliminary Preferred Alternative

Prepared by:
National Marine Fisheries Service (NMFS) West Coast Region
National Oceanic and Atmospheric Administration (NOAA)
Department of Commerce (DOC)

And

Pacific Fishery Management Council (Council)

April 2026

Contents

List of Tables

List of Figures

1. Introduction

This document is a draft Impact Analysis and Magnuson-Stevens Fishery Conservation and Management Act (MSA) Analysis. The Impact Analysis provides assessments of the potential environmental impacts of the Proposed Action and its reasonable alternatives (hereafter referred to as Alternatives), and the MSA Analysis addresses how the Alternatives align with the National Standards. This Analysis addresses the statutory requirements of the National Environmental Policy Act (NEPA) and the MSA. An Impacts/MSA Analysis (hereafter, referred to as Analysis or Impact Analysis) is a standard document produced by the Pacific Fishery Management Council (Council) and the National Marine Fisheries Service (NMFS) West Coast Region to provide the analytical background for decision-making.

We, the Council and NMFS, are analyzing the effects anticipated from setting harvest specifications and management measures for the 2027-28 groundfish fisheries managed under the Pacific Coast Groundfish Fishery Management Plan (hereafter, the Groundfish FMP).

1.1 Proposed Action and Description of Management Area

In accordance with the MSA, the principal legal basis for fishery management within the Exclusive Economic Zone (EEZ), the Proposed Action would implement the following:

1. Harvest control rules (HCRs), harvest specifications (overfishing limits [OFL], acceptable biological catches [ABC], annual catch limits [ACL], and allocations) for all groundfish stocks and stock complexes "in the fishery."
2. Management measures, to achieve, but not exceed, annual harvest specifications.

Some of these elements require an FMP amendment, which constitutes part of the Proposed Action as described in Chapter 2.

The management area for this action is the EEZ, defined as 3 nautical miles (nm) to 200 nm from shore along the coasts of Washington, Oregon, and California and the communities that engage in fishing in waters off these states. Figure 1 in the Groundfish FMP depicts this management area.

1.2 Purpose and Need

The purpose of this action is to prevent overfishing while achieving, on a continuing basis, the optimum yield from the fishery. (MSA § 301(a)(1)). This is referred to as "to optimize" or "optimizing" the fishery throughout this document.

We (*i.e.*, the Council and NMFS) need to respond to new scientific data about the stocks and stock complexes in the fishery, as well as new information about the needs of fishing communities. Regularly updating harvest specifications and management measures allows us to: 1) ensure catch limits are set according to the best scientific information available (BSIA); 2) ensure that management measures are set to achieve but not exceed catch limits; and 3) to afford additional fishing opportunities where possible.

The Proposed Action also must be consistent with the National Standard Guidelines (50 CFR 600.305) for fishery management (see Section 8.0).

1.3 Tiering and Reference Documents

We are tiering this document from the "Harvest Specifications and Management Measures for 2015-16 and Bienniums Thereafter, Final Environmental Impact Statement" (hereafter, referred to as the 2015 EIS). The 2027-28 biennium is the sixth period tiered from the 2015 EIS. As such, the 2015 EIS is incorporated by reference, as are the EAs evaluating the 2017-18, 2019-20 2021-22, 2023-24 and 2025-26 bienniums, which hereafter are referenced as such. These documents are posted on the NOAA Fisheries website[1].

As discussed in the 2015 EIS and each subsequent tiered document, the adoption and adjustment of regulations for managing the groundfish fishery (including harvest specifications and management measures) are part of an ongoing, adaptive process. Changes in the type and intensity of environmental impacts tend not to differ substantially from one period to the next.

This Analysis also relies on several documents presenting analysis and information relevant to the decision-making process:

- Harvest Specifications Section of the Pacific Coast Groundfish Fishery 2027-28 Harvest Specifications and Management Measures Draft Analytical Document (PFMC 2026a). This document evaluates 2027-28 HCRs and related harvest specifications and routine and new management measures. Hereinafter, referred to as the Council Analytical Document.
- Socioeconomic Analyses for the 2027-28 Harvest Specifications and Management Measures (PFMC 2026b), presenting current information on fishery economic conditions and the estimated commercial and recreational socioeconomic impacts of the Alternatives considered in the decision-making process. Hereinafter, referred to as the Socioeconomic Analysis.
- Groundfish Stock Assessment and Fishery Evaluation (SAFE, PFMC 2025c, updates in process) summarizes the biological condition of managed stocks, stock complexes, and fisheries, as well as the socioeconomic condition of the recreational and commercial fishing industries.
- The Groundfish FMP (PFMC, 2025e). The FMP details the groundfish management plan for the entire groundfish fishery.

These documents are incorporated by reference.

1.4 History of the Action

Section 5.4 of the Groundfish FMP describes the specific implementation procedures for specifications and management measures. The Council has so far discussed the proposed 2027-28 harvest specifications and management measures at four meetings between June 2025 and March

[1] Consistent with guidance in NOAA's NEPA Companion Manual (2025), as a number of the prior NEPA documents that this EA tiers to are more than 5 years old, we have reevaluated the underlying assumptions and analysis in those documents and determined that both remain valid insofar as the assumptions and analysis apply to our evaluation of the Proposed Action.

2026; the Council will take final action on the management measures portion of the Proposed Action at their April and June 2026 meetings. We published draft documents and offered public comment opportunities at each meeting. We noticed the meetings in the **Federal Register** and on the Council's website and broadcasted the meetings live on the Council's YouTube Channel. Recordings of each meeting are available on the same channel. This Analysis draws from the highly detailed analytical information provided to the Council and the public, referenced above.

In addition to public comment on the Proposed Action and Alternatives during Council meetings in 2025 and 2026, this draft Analysis will support Federal rulemaking between final Council action (June 2026) and the January 1, 2027, projected implementation date of the final rule. This Federal rulemaking process includes a public comment period noticed in the **Federal Register**.

2. Alternatives

Fishery managers must adapt to constantly changing fishery and ecosystem conditions while implementing the goals, indicators, and triggers defined in the MSA, the National Standards enumerated in the MSA, and the Groundfish FMP. Within this context, we manage the fishery by constantly collecting, reviewing, and evaluating data before choosing management actions necessary to achieve the purpose of the Proposed Action. The Proposed Action (Section 1.1) that we evaluate in this Analysis addresses multiple elements of our ongoing adaptive management framework. Section 5.1 of the Groundfish FMP describes the default harvest specifications process as the application of BSIA, as required by MSA National Standard 2, to the default HCR identified in the Groundfish FMP. The Alternatives analyzed in this preliminary draft Analysis are the No Action Alternative, which reflects the continued use of HCRs from the 2025-26 biennium in 2027 and 2028, but without the application of BSIA, and two Alternatives under which we would apply either default HCRs (Alternative 1) with BSIA applied or alternative HCRs (Alternative 2). Management measures necessary to manage catch to harvest limits and achieve other biological and socioeconomic objectives are also included under each of these Alternatives.

2.1 Alternatives Design and Screening

Over the past 20 years, we have prepared 33 EAs and 10 Environmental Impact Statements (EISs) for these adaptive groundfish fishery management actions. Five EISs assessed harvest specifications and management measures prior to the 2015-16 biennial cycle. With the stability of fishery management and rationalization of major components of the fishery (described in the SAFE document), and the development of a programmatic approach, the biennial harvest specifications process (described in Chapter 5 of the FMP), has evolved into a structured process with two components:

> (1) The Council determines catch limits using stock assessments, realized catch, and HCRs for each biennial cycle. The discretionary action is the HCR, which determines the resulting harvest specifications (OFLs, ABCs, ACLs, etc.); therefore, this component is referred to as the harvest specifications throughout this document.
>
> (2) The Council makes additional adjustments as needed to optimize[2] the fishery, referred to as the management measures throughout this document. We typically discuss two types of management measures - "routine" management measures and "new" management measures. Routine management measures include measures that are regularly adjusted each biennium (e.g., trip limits, bag limits, seasonal closures/openings), and do not constitute a substantive change in management. New management measures are novel and constitute a substantive change in management that warrants additional analysis that would not be contained in prior EAs or EISs. There are no "new" management measures included in the Proposed Action for the 2027-28 biennium.

[2] Optimize means achieving OY and preventing overfishing, per statutory obligations and as described in Section 1.2, Purpose and Need.

Each new or revised management action is the outcome of a consultative process that usually begins with proposals from states, Tribes, fishermen, industry, and/or environmental interest groups. The Groundfish Management Team (GMT) presents the Council and the public with analyses and options. The Council narrows the range of actions and alternatives and further guides the GMT's analysis. Upon completion of the analysis and the Council's adoption of a Preferred Alternative (referred to as the final preferred alternative (FPA) in the Council process), we prepare an environmental review under NEPA. We also prepare analyses under other applicable laws and executive orders, including the MSA, Executive Order 12866 (Regulatory Planning and Review), and the Regulatory Flexibility Act. This process ensures optimum fishery management while minimizing adverse economic, biological, and physical impacts. The analytical documents listed in Section 1.3 describe many options for components of the Proposed Action that the Council considered but eliminated when refining HCRs and management measures for this biennial cycle. The two Alternatives evaluated in this Analysis reflect refined proposals, which are evaluated below, and will be updated to include the Council's FPA after the April 2026 and June 2026 meetings. The Council's Preferred Alternative will be recommended to NMFS for implementation in Federal rulemaking.

The programmatic approach we introduced in the 2015-16 cycle has allowed us to focus on key elements of the adaptive management system that are new or changed in a particular biennium and that may result in significant impacts to the human environment. Since there are no "new" management measures for the 2027-28 biennium, this Analysis is focused on changes to default HCRs.

2.2 Harvest Control Rules

In Groundfish FMP Amendment 24, supported by the 2015 EIS, we established default HCRs that apply the BSIA to catch limits set during each biennial decision-making cycle. Section 2.1 of the 2021-22 EA defines the catch limit terms, how we apply rules to the latest estimates of biomass for each stock or stock complex, and how we account for uncertainty to determine the ACLs. We incorporate this section by reference. It describes a process by which we determine OFLs, ABCs, and ACLs for managed stocks and stock complexes.

Additional information on this process and on catch limits can be found in the following documents:

- Final rule for the 2015–16 harvest specifications and management measures and Amendment 24 (80 FR 12567, March 10, 2015);
- Groundfish FMP (Chapter 4); and
- Groundfish SAFE (PFMC, 2025c, updates in process).

These default HCRs and resulting harvest specifications (OFLs, ABCs, and ACLs) are part of Alternative 1. The Council may decide to diverge from a default HCR and consider alternative HCRs for managed stocks. Of the 86 groundfish species currently managed under the Groundfish FMP, we diverged from four default HCRs in 2017-18, four in 2019-20, five in 2021-22, three in 2023-24, and four in 2025-26. In this 2027-28 cycle, we are considering alternative HCRs for eight stocks under Alternative 2. For all other stocks and stock complexes, default HCRs are considered under each of the following alternatives, in addition to the stocks with alternative HCRs. Alternative 2 contemplates alternative HCRs for canary, chilipepper, rougheye/blackspotted,

widow, yelloweye, and yellowtail (north of 40°10′ N. lat.) rockfishes; shortspine thornyhead; and petrale sole. Noting, chilipepper north of 40°10′ N. lat. and rougheye/blackspotted rockfishes are managed in the shelf rockfish complex north of 40°10′ N. lat. and the slope rockfish complexes north and south of 40°10′ N. lat., respectively.

2.3 Management Measures

Once stock-specific ACLs are derived based on default or alternative HCRs, we use management measures to allow fishermen to maximize fishing opportunity to achieve, but not exceed, ACLs.

Groundfish FMP Chapter 6, Management Measures, describes "the procedures and methods that may be used to directly control fishing activities so that total catch of a given species or species group does not exceed specified harvest limits." Management measures may also involve making downward adjustments to the ACL to account for certain fishing activities and allocating the resulting fishery Harvest Guideline to facilitate attainment or equitable harvest opportunities in specific fisheries or states. Groundfish FMP Section 6.2 describes the framework procedures that we use to establish, adjust, and implement management measures. We classify these as automatic actions, routine management measures, or new actions.

- **Automatic actions** are non-discretionary. NMFS may initiate them without prior public notice, opportunity to comment, or a Council meeting. The impacts must be reasonably accountable, based on previous application of the action or past analysis. We may apply these measures to a stock, stock complex, or to individual stocks in a complex. Examples include fishery, season, or gear type closures when a quota is projected to, or has been, attained.
- **Routine management measures** that the Council determines are likely to be adjusted on an annual or more frequent basis and that we have classified as routine through either the specifications and management measures or rulemaking processes. Section 6.2.1.1 of the Groundfish FMP and 50 CFR 660.60(c) describe available routine management actions. We may apply these measures to a stock, stock complex, or to individual stocks in a complex.
- **New actions** require discussion at one to three Council meetings and public notice in two **Federal Register** notices depending on the type of management measure. An FMP amendment or regulatory amendment may be required.

Chapter 6 also inventories the range of management measures available to us. We use management measures to: account for set-asides, deductions, and targets (FMP Section 4.7); adjust or allocate the catch limits (Section 6.3); reduce bycatch and bycatch mortality (Section 6.5); authorize or prohibit gear, gear configurations, and deployment strategies (Section 6.6); restrict catch through landing, trip frequency, bag, and size limits (Section 6.7); establish fishing seasons and closed areas (Section 6.8); and limit fishing through permits, licenses, endorsements, and allocations (Section 6.9). Changing ecosystem or economic conditions, or other factors, may precipitate routine adjustments to the suite of management measures implemented at the outset of the biennium, if necessary to achieve conservation objectives or with the goal of attaining optimum yield (referred to as "inseason actions").

2.3.1 Management Measure Adjustments for the 2027-28 Biennium

For the 2027-28 biennium we will adjust management measures defined in Sections 6.6 to 6.9 of the Groundfish FMP and at 50 CFR 660.60 and may apply automatic actions (if needed during the

fishing season). Together, these actions help us ensure that catch of individual stocks, stock complexes, or stocks within a complex do not exceed ACLs adopted for the biennium.

Most of the management measures the Council recommended for the 2027-28 biennium are minor variations to existing routine management measures (i.e., deductions or allocations of ACLs or adjusting annual catch targets (ACTs), bag limits, trip limits, and recreational season structures). We summarize key aspects of these changes here and incorporate by reference the relevant sections of the Council Analytical Document that supports the Council's decision-making process under the MSA. These routine management measures act as mitigation measures for achieving but not exceeding ACLs, in and of themselves, they do not have environmental impacts and as such are not analyzed further.

In addition, the 2025 stock assessments for yelloweye rockfish (Johnston et al. 2025) and California quillback rockfish (Langseth et al. 2025), both of which have been adopted as BSIA, show that both stocks are above 40% unfished biomass. As such, the Proposed Action will include an amendment to the Groundfish FMP to remove the stocks from their respective rebuilding plans.

Allocations and Catch Accounting

Once ACLs are established, various allocation and catch accounting measures must be specified. An allocation sets a limit on catch within a fishery sector. Other mechanisms are not hard limits but are used as catch tracking benchmarks. Management measures may be adjusted during the biennium to reduce the likelihood that such "soft" limits (or informal allocations) are not exceeded. Figure 1 is a generalized schematic showing the distribution of the ACL to the fishery during the biennial process, including the determination and application of two-year allocations and the application of those specified in the Groundfish FMP. Allocation and catch accounting measures considered for this biennium are:

- Establishing **off-the-top deductions** for fisheries for which the Council does not exercise management authority: Tribal fisheries, research, exempted fishing permits (EFPs), incidental open access (IOA), bycatch in other fisheries, etc. We explained these deductions in Section 4.2.1.1 of the 2015 EIS. In brief, off-the-top deductions account for groundfish mortality in the Pacific Coast Treaty Tribe fisheries, scientific research, IOA non-groundfish target fisheries, and for EFPs. The Council adopted a new methodology to estimate research and IOA off-the-top deductions, which reduced the off-the-top deductions for all stocks and stock complexes. Some stocks and stock complexes substantively changed from the last management period (Chapter 1 in the Council Analytical Document (Agenda Item C.7, Attachment 2, April 2026) describes these deductions for each alternative and the methods used to derive them).
- Establishing **set-asides** to account for incidental catch of non-whiting species in the catcher-processor and mothership (at-sea) sectors targeting Pacific whiting.
- Adjusting short-term, biennial **trawl/non-trawl allocations** for stocks where the allocation is not defined in the Groundfish FMP ("Amendment 21 allocations"). Existing biennial allocations will continue during the 2027-28 biennium except modifications to the allocations for widow rockfish and slope rockfish south of 40°10′ N. lat. are considered. Adjustments to these biennial allocations are made to better account for the needs of the fishery.

- **Informal allocations** in the form of Harvest Guidelines (HG) or sharing agreements between states for the limited entry fixed gear, open access, and recreational fishery sectors (under the non-trawl allocation) also may be adjusted. The ability to make short-term changes to allocations for particular stocks is meant to better match fishing opportunities with the needs of various groundfish fishery sectors and to account for any relevant changes in stock or oceanic conditions.
- Establishing or adjusting **ACTs**. The yelloweye rockfish ACT for all the non-trawl fishery sectors is under consideration for revision. New recreational ACTs are being considered for lingcod south of 40° 10' N. lat., quillback rockfish off California, and vermillion/sunset rockfish south of 40° 10' N. lat. The existing recreational ACT for California copper rockfish south of 34° 27′ N. lat. and the shortspine thornyhead north of 34° 27′ N. lat. ACT in the non-trawl commercial sector would not be adjusted. As defined in Section 2.2 of the Groundfish FMP, an ACT is "a management target set below the ACL and may be used as an [accountability measure] in cases where there is uncertainty in inseason catch monitoring to ensure against exceeding an ACL. Since the ACT is a target and not a limit it can be used in lieu of HGs or strategically to accomplish other management objectives in Section 4.7 of the Groundfish FMP."

In addition to the short-term (two-year) allocations described above, Section 6.3.2 of the Groundfish FMP defines fixed allocations for a variety of stocks. Sablefish north of 36º N lat. is allocated according to the scheme depicted in FMP Figure 6-1. The FMP specifies a "trawl/non-trawl" division between the trawl fishery and non-trawl fishery, which comprises the commercial and recreational sectors, for 14 stocks and 2 stock complexes listed in FMP Table 6-1.[3] Finally, because Pacific halibut bycatch is managed through individual bycatch quotas in the individual fishing quota (IFQ) fishery, an allocation is made for that species. Modifying these allocations requires an FMP amendment.

As depicted in Figure 1, the non-trawl fishery HG is further allocated among commercial and recreational fisheries. For a concise enumeration of these allocations percentages and catch accounting measures considered for the 2027-28 biennium, see Agenda Item C.7. Attachment 1, April 2026

[3] Table 6-1 of the FMP Document shows the formal limited entry trawl and non-trawl sector allocations, as defined in Amendment 21, which were previously evaluated in during previous biennial cycles (see the 2015 EIS and 2022 EA).

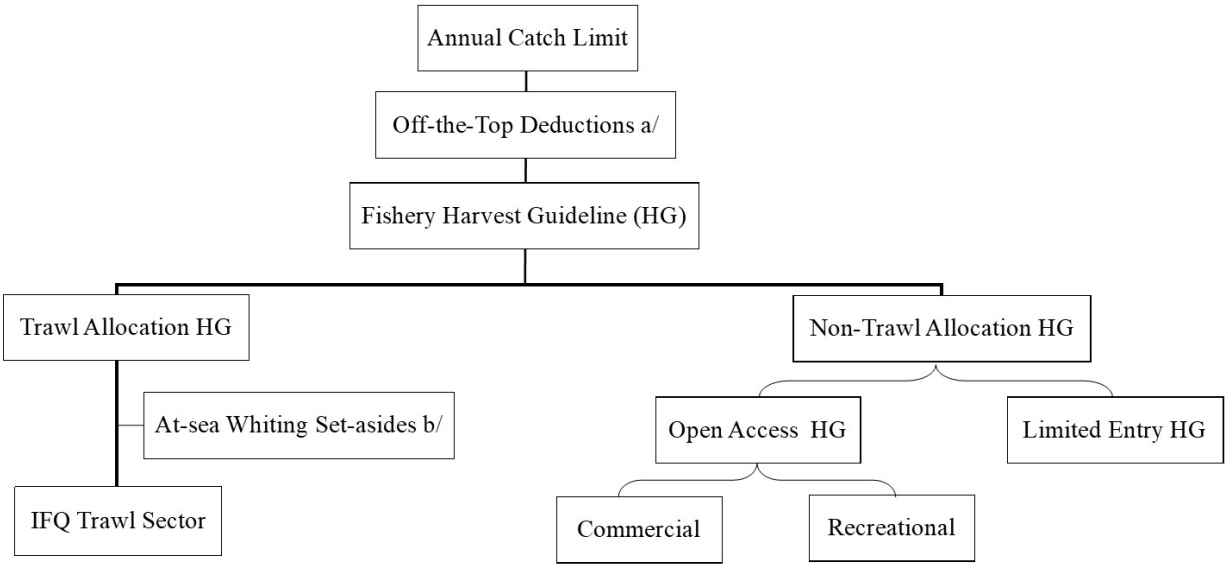


Figure 1. Generalized schematic showing distribution of an annual catch limit (ACL) across all West Coast Groundfish fishery sectors. Schematic does not imply all stocks and stock complexes are subject to ACL distribution in the manner shown in this figure. Each stock or stock complex is subject to a specific distribution and, potentially, allocation to the trawl and non-trawl sectors. Apportionment within sectors may not happen for all stocks or stock complexes.

2.4 Description of the Alternatives

Below we describe the Alternatives, which combine HCRs and the management measures necessary to optimize the fishery consistent with the ACLs determined by the HCRs under each Alternative.

2.4.1 No Action Alternative: 2025 Harvest Specifications

The NOAA NEPA Companion Manual (2025) defines the No Action Alternative as "'no change' from a current management direction or level of management intensity". *CEQ's Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations* (46 FR 18026, March 23, 1981) also states that for management actions, "'no action' is 'no change' from current management direction or level of management intensity." Amendment 24 established the process by which BSIA would be applied to default HCRs. Thus, this process would never select a true no change scenario, as to do so would ignore BSIA and would be inconsistent with National Standard 2 of the MSA. If, in the rare instance where Federal rulemaking was delayed beyond January 1, 2027, then the harvest specifications and management measures in place in 2026 would continue in 2027 until the rulemaking process was finalized. In the Council Analytical Document, we use the 2025 harvest specifications and fishery performance as No Action, for comparative purposes to the proposed Alternatives, only because complete fishery data from 2026 was not available when this Analysis was prepared. This comparison is useful for Council and stakeholders as it can show the relative change of values between biennia across the Alternatives.

Differences in harvest specifications in 2025 and 2026 are relatively small, meaning that the use of 2025 specifications in the analysis does not meaningfully affect the conclusions. Where appropriate, we use 2026 management measures that were not in place in 2025 as a basis of comparison between the Alternatives to No Action.

In particular, commercial and recreational management measures for California quillback rockfish were changed to reflect the updated status of the stock. At the beginning of 2025, this stock was considered overfished. The 2025 stock assessment (Langseth et al, 2025) found the stock to no longer be overfished. Accordingly, in September 2025, the California Department of Fish and Wildlife (CDFW) and the Council reversed the management measures adopted for the 2025-26 biennium in State and Federal waters, respectively, which had been intended to reduce mortality of quillback rockfish in response to the stock's overfished status at the time (see June 2025 Decision Document, Item E.3). Briefly, the early 2025 management measures prohibited retention of quillback rockfish in groundfish fisheries in the EEZ off California and established area-based commercial and recreational restrictions for certain groundfish that co-occur with California quillback rockfish. The inseason revision of those management measures continued to prohibit the retention of quillback, but increased catch limits for certain co-occurring species, and thus increased opportunity for the commercial and recreational fisheries off of California. These continued measures in 2026 are therefore more appropriate as the basis of comparison to No Action than earlier 2025 measures, which were much more restrictive.

Additionally, NMFS implemented an emergency rule (91 FR 2714), per Council recommendation in September 2025, to increase the 2026 harvest specifications and management measures for canary rockfish, shortspine thornyhead, and petrale sole based on the outcomes of the 2025 catch-only projections. These projections were endorsed by the Council's Scientific and Statistical Committee (SSC) for use in management. The increases in the ACLs were dispersed to all sectors per the trawl/non-trawl allocation methods.

2.4.2 Action Alternative 1: Default Harvest Control Rules and Associated Management

As specified in the Groundfish FMP, default HCRs represent a continuation of the current harvest policy without change, but by using BSIA (most recent information from stock assessments and other sources); the harvest specifications themselves do change. In general, this does not constitute a change in management direction or intensity. The resulting ABCs and ACLs aim to ensure that we do not exceed the OFL for any particular stock or stock complex.

Groundfish FMP Section 4.3 describes the harvest specifications framework, which is based on the use of F_{MSY} proxies. Using BSIA, these proxies are translated into OFL values. The ABC represents a precautionary reduction from the OFL to account for scientific and management uncertainty. FMP Section 4.4 describes the methods used to determine these values. Additional details on the harvest specifications framework and the use of different types of assessments in this framework may be found in the Groundfish SAFE (PFMC, 2025c, updates in process). The Council Analytical Document shows the resulting default (this Alternative) and Alternative 2, harvest specifications (OFLs, ABCs, ACLs, and where applicable, ACTs) being considered for the 2027-28 biennium.

As described in Section 2.3, allocations and catch accounting measures, catch control measures, and other administrative changes are incorporated into this Alternative. Overall, these measures

are intended to optimize the fishery and we conclude do not represent a material change in management intensity.

2.4.3 Action Alternative 2: Alternative Harvest Control Rules and Associated Change in Management Intensity

Under this Alternative we diverge from the default HCRs for eight stocks to address conservation objectives, socioeconomic concerns, management uncertainty, or other factors necessary to meet management objectives, including OY. Alternative HCRs are considered for canary, chilipepper, rougheye/blackspotted, widow, yelloweye, and yellowtail (north of 40°10′ N. lat.) rockfishes; shortspine thornyhead, and petrale sole (Table 1); for all other stocks, default HCRs would be implemented. This Alternative incorporates all the routine adjustments to management measures described in Alternative 1, but with adjustments in the values of various allocations, catch accounting limits, and catch control measures consistent with changes in ACLs where alternative HCRs are applied. Similar to Alternative 1, under Alternative 2, management intensity would not change from the level in 2026. The rationale for the departure from Alternative 1 HCRs under Alternative 2 is as follows:

Canary Rockfish: The Alternative 2 HCR is ABC =ACL, P* 0.45 and removal of the 40-10 rule[4] to increase ACLs. Application of the 40-10 rule is a policy decision by the Council. The 40-10 adjustment is a precautionary reduction of the ABC due to the status of the stock as detailed in the FMP at Section 4.6.1 (PFMC, 2025e). Canary rockfish ACLs are generally underattained; however, even when the ACL is underattained, individual sectors or vessels can be constrained by lower allocations. Removal of the 40-10 rule may provide some relief to all fishing sectors, improve operational flexibility, and help to minimize socioeconomic impacts from this constraining stock. The Council's PPA for canary rockfish is Alternative 2.

Chilipepper Rockfish: The Alternative 2 HCR is a constant ACL of 2,114 metric tons (mt). This constant catch ACL equates to the long-term equilibrium yield based on a spawning potential ratio harvest rate [$SPR_{50\%}$]). Post this biennium, the ACL would revert back to the default HCR from the 2026-26 biennium (ABC = ACL, P* 0.45). Alternative 2 takes into account recent fishery performance and allows for the fraction of unfished biomass to decrease at a slower rate than Alternative 1, which may reduce the risk of decreasing harvest limits in the future. The Council's preliminary preferred alternative (PPA) for chilipepper is Alternative 2.

Rougheye/blackspotted Rockfish. The Alternative 2 HCR is a constant coastwide ACL of 300 mt. Post this biennium, the ACL would revert back to the default HCR from the 2025-26 biennium (ABC=ACL, P* 0.45). The 300 mt constant catch reflects the maximum mortality for this stock reported in the Estimated Discard and Catch of Groundfish Species in the 2024 U.S. West Coast Fisheries (Somers et al, 2025). Rougheye and blackspotted rockfish are considered a cryptic pair and were assessed as a single unit (Cope et al, 2025). This stock is managed in the slope rockfish complexes north and south of 40°10′ N. lat. This HCR is meant as a precautionary step to address

[4] The 40-10 HCR is applied when a stock's biomass falls below the management target of 40% unfished biomass; the further the stock's biomass is below the 40% threshold, the greater the reduction in ACL relative to the ABC (Groundfish FMP, Section 4.6.1). When a stock's biomass raises above the management target of 40%, the 40-10 adjustment automatically no longer applies.

the uncertainty that surrounds the estimate of biomass from the assessment. The Council's PPA for rougheye/blackspotted rockfish is Alternative 2.

Widow Rockfish: This section will be completed after the April 2026 Council meeting**.**

Yelloweye Rockfish: The Alternative 2 HCR is a constant catch ACL of 85 mt, which is a midpoint between the 2026 ACL and the 2027 Alternative 1 default HCR ACL. The 2026 ACL is 56.6 mt and the 2027 ACL under the default HCR is 113 mt; 85 mt provides a catch limit in the middle, which provides some relief to the fishery with the higher ACLs while balancing a precautionary approach. Post this biennium, the yelloweye rockfish HCR would revert back to the default (ABC=ACL, P* 0.40). The Council recognizes that the assessment (Johnston et al, 2025) indicates that yelloweye rockfish is rebuilt[5]. The SSC noted that although this stock could be considered rebuilt following this update assessment (fraction unfished = 0.401), the particular life history traits of yelloweye rockfish make it particularly vulnerable to fishing (Cope et al., 2011). This HCR acknowledges uncertainty of the assessment and is a conservative measure to maintain the positive biomass trajectory of the stock as it comes out of its rebuilding period. The Council's PPA for yelloweye rockfish is Alternative 2.

Yellowtail Rockfish (North of 40°10′ N. lat.) The Alternative 2 HCR is a phase-in approach to ramp down the ACL over the course of the 2027-28 biennium. In 2027, the HCR would be ABC = ACL of 5,050 mt (one mt below the OFL) and in 2028, the HCR would use a mid-point of the newly calculated OFL and ABC = ACL. Post this biennium, the HCR would revert back to the default HCR from the 2025-26 biennium (ABC=ACL, P* 0.45). The rationale for selection of this alternative HCR reflects the Council's concern about impacts on the midwater trawl fishery. The OFLs predicted from this assessment (Oken et al, 2025), which are based on full attainment of the ACL, are only 20-24 percent above estimated catches in 2025 and 2026, and thus, are likely to put constraints on individual commercial trawl vessel limits. This phase-in approach would keep the ABC and ACL below the OFL and would provide the trawl fleet immediate relief while transitioning to the lower limits (see 600.310(f)(2)(ii)(A). The Council's PPA for yellowtail rockfish (North of 40°10′ N. lat.) is Alternative 2.

Shortspine thornyhead: The Alternative 2 HCR is a phase approach, using a constant catch ABC = ACL of 902 mt for both 2027 and 2028. The 2027 ABC/ACL is the ABC for 2026 as set forth in the emergency rule that increased the 2026 ACL according to the 2025 catch-only projection (91 FR 2714). Post this biennium, the HCR would revert back to the default HCR from the 2025-26 biennium (ABC>ACL, P*0.45, 40-10 adjustment). Shortspine thornyhead is a constraining stock in the groundfish trawl sector, as it limits attainments of other co-occurring stocks. Given that 2027-2028 ACLs are anticipated to constrain the trawl fishery further, this approach may allow the fishery to adjust to lower limits without exceeding the OFL by ramping down the ACL to the harvest specification amounts projected for 2029 and beyond**.** The Council's PPA for shortspine thornyhead is Alternative 2.

Petrale Sole: The Alternative 2 HCR is a constant ABC =ACL of 2,489 mt for both 2027 and 2028. Post this biennium, the HCR would revert to the default HCR from the 2025-26 biennium (ABC=ACL , P* 0.45). Petrale sole is a highly attained stock. Due to anticipated constraints to the

[5] As noted by the SSC in Agenda Item G.3.a, Supplemental SSC Report 2, September 2025.

fishery, particularly the bottom trawl fleet, this HCR allows the fishery to adjust to lower limits without exceeding the OFL by ramping down the ACL to the harvest specification amounts projected for 2029 and beyond. The Council's PPA for petrale sole is Alternative 2.

Table 1. Proposed Action Alternatives showing harvest control rules (HCR) for canary, chilipepper, rougheye/blackspotted, widow, yelloweye, and yellowtail (north of 40°10′ N. lat.) rockfishes; shortspine thornyhead, and petrale sole under consideration by the Council.

Stock	Alternative 1 – Default HCR	Alternative 2 – Alternative HCR
Canary Rockfish	P*0.45, ABC>ACL, 40-10 adjustment *ACLs 606 mt (2027), 623 mt (2028)*	ABC=ACL, P* 0.45, no 40-10 adjustment *ACLs 643 mt (2027), 664 mt (2028)*
Chilipepper a/	ABC = ACL (P* 0.45) Coastwide ACL = 3,211 mt (2027) & 3,086 mt (2028) Chillipepper N of 40°10′ N. lat. *ACL contribution =225 mt (2027) & 216 mt (2028)* Chillipepper S of 40°10′ N. lat. *ACL =2,986 (2027) & 2,870 (2028)*	Constant ACL = 2,114 mt Chillipepper N of 40°10′ N. lat. *2027-28 ACL contribution =148 mt* Chillipepper S of 40°10′ N. lat. *2027-28 ACL =1,966 mt*
Rougheye/ Blackspotted Rockfish b/	ABC = ACL (P* 0.45) Coastwide ACL = 844 mt (2027) & 827 mt (2028) N of 40°10′ N. lat. *ACL contribution = 827 mt (2027), 810 mt (2028)* S of 40°10′ N. lat. *2027-28 ACL contribution = 17 mt*	Constant ACL = 300 mt N of 40°10′ N. lat. *2027-28 ACL contributions = 294 mt* S of 40°10′ N. lat. *2027-28 ACL contribution = 6 mt*
Widow Rockfish	ABC=ACL, P*0.45 *ACLs 4,596 mt (2027), 4,810 mt (2028)*	TBD
Yelloweye Rockfish	ABC=ACL, P*0.40 *2027-28 ACLs = 113 mt*	Constant ACL = 85 mt
Yellowtail Rockfish (north of 40°10′ N. lat.)	ABC=ACL, P*0.45 *ACLs 4,723 mt (2027), 4,540 mt (2028)*	Ad hoc phase-in *ACLs 5,050 mt (2027), 4,730 mt (2028)*
Shortspine thornyhead	P*0.45, ABC>ACL, 40-10 adjustment *ACLs 847 mt (2027), 856 mt (2028)*	Constant ABC = ACL 902 mt
Petrale Sole	ABC=ACL, P*0.45 *ACLs 2,449 mt (2027), 2,423 mt (2028)*	Constant ABC = ACL 2,489 mt

a/ OFL apportioned N (7%) and S (93%) of 40º10' N. lat.
b/ OFL apportioned N (98%) and S (2%) of 40º10' N. lat.

2.4.4 Alternatives Considered but Rejected

Rougheye/blackspotted Rockfish: The Council considered a phase in approach that included setting a constant ACL of 519 mt (sustainable yield using the MSY proxy $SPR_{50\%}$), for 2027-28 only and then reverting to the default HCR of ABC = ACL, P* 0.45. The Council requested consideration of this alternative HCR to explore a more precautionary approach to account for uncertainty in the scale of the assessment by setting harvest specifications lower than the assessment projections (Agenda Item G.6.a Supplemental GMT Report 3 Sept 2025, Table 3-A, Agenda Item F.3 Attachment 2, November 2025). The Council rejected this alternative HCR as the resulting harvest specifications are within the range of harvest specifications resulting from Alternative 1 and Alternative 2.

3. Methodology

In this section, we discuss our analytical approach for this tiered Impact Analysis and explain why we are including new elements in this biennial cycle or excluding elements that we have addressed in previous cycles.

Our decisions are based on 40 years of experience managing the Pacific groundfish fishery. We carefully consider whether each proposal is justified by one or more of the MSA's National Standards and whether it improves the balance between three simultaneous purposes: (1) maximizing fair, equitable, and efficient attainment from the fishery, while considering the importance of fishery resources to fishing communities and the safety of human life at sea, (2) protecting natural resources by preventing overfishing of groundfish and minimizing adverse effects on other species or habitat, and (3) ensuring that proposed modifications are legal, enforceable, and not overly burdensome on both regulators and fishery stakeholders. As required by the MSA, we base our decisions on BSIA. We note that since preparation of the 2015 EIS, from which we are tiering this Analysis, the fishery and the affected environment have evolved with a mature fishery rationalization structure, rebuilt stocks, emerging fisheries responding to new opportunities and increased catch limits, changes in gear (NMFS 2018), and adjustments to closed areas (PFMC and NMFS 2019). Refer to the SAFE Document (PFMC, 2025c) for more recent information on the current management structure of the fishery and the status of managed stocks.

Below we outline factors contributing to the analytical approach taken in this Analysis.

3.1 Groundfish Stocks

The NEPA determination of significance is based on an evaluation of the context and degree of the reasonably foreseeable effects on the potentially affected environment (NOAA NEPA Companion Manual) The context is the groundfish fishery within the U.S. EEZ off the coasts of California, Oregon, and Washington. In Section 4.1 of the 2015 EIS, we identified the following biological indicators of resource health that describe the degree of the effects on the groundfish species:

- Stock Productivity
    - Are fishing practices likely to change the reproductive success of groundfish stocks?
    - Are fishing operations likely to interfere with or disturb spawning and reproductive behavior or juvenile survival rates such that it raises concern about a stock's ability to maintain its biomass at or above the biomass level that produces the Maximum Sustainable Yield (B_{MSY})?
- Fishing Mortality
    - Are harvest levels likely to result in overfishing?
    - For healthy and precautionary zone stocks are harvest levels likely to remove a portion of the spawning population from the stock such that the stock is likely to become overfished?
    - For overfished stocks, are harvest levels likely to rebuild the stock by T_{TARGET} ?
- Genetic structure

- Are changes in the time and location of fishing likely to result in changes to the genetic structure of the groundfish populations?
- Will fishing on particular sub stocks or targeting fish with certain characteristics (e.g., large size) alter the genetic structure of the population over time?

The 2015 EIS identified prey availability as a fourth indicator of biological health. We discuss this as an ecosystem impact in Section 4.4 of this tiered Impact Analysis.

The Council Analytical Document assesses the total catch mortality of selected exploited groundfish stocks and stock complexes under the Alternatives. The purpose of these assessments is to identify management measures necessary to constrain catch within limits established for various fishery sectors and the overall ACL for each stock. During each biennium we monitor catch on an ongoing basis and implement adjustments to these accountability measures, as necessary to ensure ACLs are not exceeded. This substantially reduces the risk that overfishing will occur.

Factors contributing to impacts on genetic structure have not materially changed from what is disclosed in the 2015 EIS (Section 4.1.3), so resulting impacts are not further discussed in this Analysis. The likelihood of adverse effects on genetic structure and reproductive success is reduced if fishing mortality is maintained below the OFL, which is the purpose of updating harvest specifications (based on default or alternative HCRs) and related management measures.

In Section 4.8 of the 2015 EIS, we evaluated the biological impacts of alternative harvest specification policies over a 10-year period based on projections from stock assessments current at the time. Projections were run under three alternative "states of nature," which captured the principal source of uncertainty in the relevant stock assessment. While those projections were useful in the evaluation of alternative harvest policies, we do not use them in considering the impacts of the Proposed Action, because more recent information is available through stock assessments.

We evaluate the impacts of fishing authorized by the Proposed Action through stock assessments, conducted periodically. Stock assessments estimate the status of a stock, in terms of fishing mortality and biomass, which are judged against related biological reference points specified in National Standard 1 Guidelines. Stock assessments are also used to evaluate how the application of harvest policies (i.e., HCRs) will affect the future status of stocks in relation to those biological reference points. These projections take a conservative approach in that full attainment of projected ACLs is assumed even though historically attainment has been below, and in some cases well below, the catch limits for many stocks. Benchmark stock assessments and update assessments (in which the existing model specification is run with added catch data) are conducted according to a recommended schedule considered biennially by the Council. That means that in most cases we use more recent information on the status of stocks in the biennial process than what is presented in the 2015 EIS. In addition, the harvest specifications framework dictates an additional precautionary reduction from the OFL based on how long it has been since a new assessment or update was conducted.

The harvest specification policy framework evaluated in the 2015 EIS and incorporated into the Groundfish FMP by Amendment 24 allows us, through the biennial process, to modify existing, default HCRs should BSIA revealed in more recent stock assessments dictate that need (or to optimize the fishery without risking overfishing). As discussed in Section 2.4, in this biennial cycle, we are proposing to revise default HCRs for eight stocks. We will continue, in future cycles and between those cycles, if necessary, in compliance with the MSA and NEPA, to revise HCRs based on environmental and economic conditions. In doing so, we aim to optimize the fishery consistent with the purpose and need for the Proposed Action described in Section 1.2.

3.1 Non-Groundfish Fish

Non-groundfish fish include fish managed under the Council's Salmon, Highly Migratory Species, and Coastal Pelagic Species FMPs. The species composition of non-groundfish species caught in groundfish fisheries is described in Section 3.6 of the 2015 EIS. We have not changed harvest policies or seen changes in fishery performance that have substantively changed the composition in incidentally caught non-groundfish. The most recent information about non-groundfish species caught in the groundfish fishery can be found in the 2024 groundfish discard and catch report (Somers*, et al.* 2025). Given that the management framework and resulting management intensity has not substantially changed, we do not address impacts on non-groundfish species in this impact analysis.

3.2 Parallel Fishery Management Actions

NEPA requires us to evaluate and disclose the environmental impacts of a proposed action and its alternatives. The components of the Proposed Action presented in Section 1.1 include all aspects of rulemaking needed to authorize a sustainable groundfish fishery in early 2027. However, we have the discretion to implement other management measures that we may have discussed during 2025 and 2026 Council meetings, through subsequent rulemaking processes, outside of the biennial harvest specifications and management measures process. Furthermore, we may implement measures that we determine constitute discrete actions that are not tied to the harvest specifications process and are therefore not evaluated in this Analysis.

3.3 Effects of Allocating Fishing Opportunity

In past biennial cycles, we found that we cannot determine the specific impacts of changes to the allocation of fishing opportunity as described in Section 2.3. This is because it is not possible to predict how any allocation changes might affect fishing strategies, which in total, affect spatio-temporal patterns of fishing and the resulting catch composition.

As part of the biennial decision-making process, we quantitatively estimate the aggregate impacts of management, including allocations, on managed fish stocks and the resulting socio-economic impacts derived from the estimated ex-vessel revenue. We use a variety of catch projection models to identify management measures for various fishery sectors that are estimated to keep catch within the limits established by the allocation framework (see Section 2.7.2 in the Groundfish SAFE (PFMC, 2025c) for description of the catch projection models and Section 2.3 for an overview of allocation procedures).

Section 4.2.1.1 (Deductions from the ACL and Allocations) of the 2015 EIS describes allocations across all sectors. We do not discuss the impacts of specific allocations or other allocative measures

(e.g., sharing agreements, ACTs, and HGs) further in this impact analysis because they do not generate new environmental impacts.

3.4 Evaluation of Other Environmental Components

As noted, socioeconomic impacts are derived from the estimated ex-vessel revenue from landings. In some cases, catch projections are used to estimate landings while in most cases full attainment of an allocation is assumed. However, for most stocks and stock complexes, catch has historically been less than the limits we establish. Therefore, the impacts on managed fish and economics are likely to be less than is forecast in this Analysis. Our analysis of impacts on the other resources (protected resources, habitat, and ecosystem) is not quantitative. Catch limits are not a predictable proxy for the rate of protected species and habitat interactions, or for any incremental effect on the California Current.

4. Environmental Analysis

The Alternatives evaluated here are described in Chapter 2.

4.1 Managed Fish

We tier this section from the 2015 EIS with an emphasis on Section 2.1.1 (Harvest Specifications), Section 3.1 (Affected Environment-Groundfish), Section 4.1 (Biological Impacts of 2015-16 Biennial Harvest Specifications on Groundfish Stocks), and Section 4.8 (Biological Impacts of Alternative Long-term Biennial Harvest Specifications on Groundfish Stocks) as updated by the biennial Environmental Assessments (2017-18, 2019-20, 2021-22, 2023-24, and 2025-26).

The 2015 EIS describes the process by which we establish harvest specifications (Section 2.1.1) and the species that we manage under the Groundfish FMP (Section 3). Section 2.1.1 presents the latitudinal and depth distribution for each species (Table 3-1). Section 3.1.1 presents fishery stock assessments, a scientific and statistical process that assesses the population size, reproductive status, fishing mortality, and sustainability. We derive fishery specifications, including ACLs, from these assessments as guided by the default HCRs. Section 3.1.1 of the 2015 EIS also explains how we consider uncertainty in the stock assessments when setting these biennial harvest specifications. Section 4.1.2 describes our productivity and susceptibility assessment, which analyzes the vulnerability of stocks to overfishing.

4.1.1 Status/Affected Environment

The Groundfish SAFE (PFMC, 2025c) provides updated information on groundfish stocks and fisheries described in the 2015 EIS sections listed above.

The Groundfish SAFE (PFMC, 2025c) Table 2-1 presents the most recent latitudinal and depth distribution of managed groundfish species, Tables 2-2 and 2-3 present the most recent productivity and susceptibility assessment scores for healthy stocks and overfished or rebuilding stocks, and Table 2-4 lists the year the recent stock assessments were completed (as of 2025) and associated management indicators from which we derive the harvest specifications as of 2026. We incorporate these four tables by reference and summarize the changes since the 2025-26 Analysis. While the fishery and underlying ecosystem conditions constantly evolve, we determine that the information below has the greatest influence on the potential impacts of the Proposed Action and the Alternatives evaluated in this document on managed fish for the 2027-28 biennium.

1. In 2025, new benchmark stock assessments were completed for: chilipepper (Dick et al, 2025), rougheye/blackspotted rockfishes (Cope et al, 2025), quillback rockfish off California (Langseth et al, 2025) yellowtail rockfish north of 40°10′ N. lat. (Oken et al, 2025), and sablefish (Wetzel et al, 2025), stock assessment updates were completed for widow (Kinneen et al, 2025) and yelloweye rockfishes (Johnston et al, 2025), and catch-only updates were completed for bocaccio (Field, 2025), OR black (Cope, 2025) canary (Langseth, 2025), and darkblotched (Hamel, 2025) rockfishes, shortspine thornyhead (Oken, 2025), and petrale sole (Taylor, 2025). The most recent stock assessments are found on the Council's website.

2. Yelloweye rockfish is, at present, managed under a rebuilding plan. The 2025 update assessment (Johnston et al, 2025) indicated the stock is no longer overfished and is rebuilt. If the status determination by NMFS agrees, an amendment to the groundfish FMP will be necessary.
3. California quillback rockfish was declared overfished in 2023. The 2025 benchmark assessment indicates the stock is no longer overfished and is rebuilt (Langseth et al, 2025). If the status determination by NMFS agrees, an amendment to the Groundfish FMP will be necessary.

4.1.2 Effects of the Alternatives on Managed Groundfish

No Action Alternative

The No Action Alternative HCRs would result in ACLs that are not based on BSIA. As described in the Council Analytical Document, application of BSIA to default HCRs (Alternative 1) results in a decrease in ACLs for most of the managed stocks (see Table 2).[6] This means that managing to No Action ACLs would increase the likelihood of overfishing for many stocks. Of the stocks and stock complex ACLs under Alternative 1, ACLs increase for 9 stocks and 4 stock complexes. There is no change for two stocks and three stock complexes and ACLs for 21 stocks and 4 stock complexes decrease. Overall, 63 percent of stocks/stock complex ACLs decrease under Alternative 1 relative to the No Action values.

The ACLs for California quillback rockfish, yelloweye rockfish, English sole, splitnose rockfish and sablefish are the notable exceptions to the above. The ACLs of these stocks changed, on average, by 60 percent. The ACL for California quillback rockfish increases by more than 800 percent and the ACL for yelloweye rockfish increases by more than 100 percent under Alternative 1. Maintaining the No Action ACLs for these two stocks would result in substantial forgone harvest opportunity for this valuable species. Additionally, the Alternative 1 ACL for English sole is 64 percent lower than under No Action and the Alternative 1 ACL for splitnose rockfish is 59 percent lower than under No Action. The rationale for these reductions is related to the age of their assessments. The SSC indicated that beyond 15 years assessments will be treated as Category 3 analyses, and the proxy MSY will be used for the OFL in most cases. Sablefish ACLs are reduced relative to No Action due to the findings of the stock assessment (Wetzel et al, 2025)

Table 2. A comparison of the annual catch limits (ACL) under No Action (2025) and Alternative 1 (2027), showing the percent (%) increase or decrease between the No Action and Alternative 1 for all Council managed groundfish stocks and stock complexes. Stocks/stock complex ACLs that increase relative to 2025 are in bold.

Stock	FMU	No Action 2025 ACL (mt)	Alt 1 2027 ACL (mt)	Difference (mt)	% increase or decrease
QUILLBACK ROCKFISH	California	1.3	12	11	+823.08%
YELLOWEYE ROCKFISH	Coastwide	56	113	57	+101.79%
Arrowtooth flounder	Coastwide	11,193	7,947	-3,246	-29.00%
Big skate	Coastwide	1,224	1,155	-69	-5.64%

[6] This is mainly due to application of time-varying sigma values used to compute the precautionary reduction from the OFL. The time-varying sigma term accounts of the age of the stock assessment, recognizing that older stock assessments provide less reliable estimates of current stock status.

Stock	FMU	No Action 2025 ACL (mt)	Alt 1 2027 ACL (mt)	Difference (mt)	% increase or decrease
Black rockfish	Washington	245	240	-5	-2.0%
Black rockfish	California	234	249	15	+6.4%
Bocaccio	S of 40º10′ N. lat.	1,681	2,288	607	+36.1%
Cabezon	California	162	150	-12	-7.4%
California scorpionfish	S of 34°27' N. lat.	244	233	-11	-4.5%
Canary rockfish	Coastwide	572	606	34	+6.0%
Chilipepper	Coastwide	2,815	2,986	171	+6.1%
Cowcod	S of 40º10′ N. lat.	77	74	-3	-3.9%
Darkblotched rockfish	Coastwide	754	773	19	+2.5%
Dover sole	Coastwide	47,424	38,573	-8,851	-18.7%
English sole	Coastwide	8,884	3,168	-5,716	-64.3%
Lingcod	N of 40º10′ N. lat.	3,631	3,482	-149	-4.1%
Lingcod	S of 40º10′ N. lat.	748	789	41	+5.5%
Longnose skate	Coastwide	1,616	1,546	-70	-4.3%
Longspine thornyhead	N of 34º27' N. lat.	2,050	1,878	-172	-8.4%
Longspine thornyhead	S of 34°27' N. lat.	648	593	-55	-8.5%
Pacific cod	Coastwide	1,600	1,600	0	0.0%
Pacific ocean perch	N of 40º10′ N. lat.	3,328	3,123	-205	-6.2%
Pacific spiny dogfish	Coastwide	1,361	1,278	-83	-6.1%
Pacific whiting a/	*Coastwide*	*295,520*	-	-	-
Petrale sole	Coastwide	2,354	2,449	95	+4.0%
Sablefish	N of 36º N. lat.	26,688	10,962	-15,726	-59.1%
Sablefish	S of 36º N. lat.	7,857	3,002	-4,855	-61.8%
Shortspine thornyhead	Coastwide	815	847	32	-3.9%
Splitnose rockfish	S of 40º10′ N. lat.	1,508	620	-888	-58.9%
Starry flounder	Coastwide	392	393	1	+0.3%
Widow rockfish b/	Coastwide	11,237	4,596	-6,641	-57.3%
Yellowtail rockfish	N of 40º10′ N. lat.	6,241	4,723	-1,518	-24.3%
Stock Complexes					
Nearshore rockfish north	N of 40º10′ N. lat.	88	85	-3	-3.4%
Nearshore rockfish south	S of 40º10′ N. lat.	932	928	-4	-0.4%
Shelf rockfish north	N of 40º10′ N. lat.	1,330	1,342	12	+0.9%
Shelf rockfish south	S of 40º10′ N. lat.	1,457	1,457	0	0.0%
Slope rockfish north	N of 40º10′ N. lat.	1,488	1,623	135	+9.1%
Slope rockfish south	S of 40º10′ N. lat.	693	699	6	+0.9%
Other fish	Coastwide	223	223	0	0.0%
Other flatfish	Coastwide	7,974	6,577	-1,397	-17.5%
Oregon black/blue/deacon rockfish	Coastwide	423	448	25	+5.9%
OR cabezon/kelp greenling	Oregon	177	174	-3	-1.7%

Stock	FMU	No Action 2025 ACL (mt)	Alt 1 2027 ACL (mt)	Difference (mt)	% increase or decrease
WA cabezon/kelp greenling	Washington	15	15	0	0.0%

a/ Pacific whiting specifications are set by a process external to the Council.
b/Harvest specifications for widow rockfish are pending; these are temporary values used for analytical purposes

Action Alternative 1

In comparison to No Action, under this alternative, harvest specifications would be set according to BSIA by applying default HCRs to information in the most recent stock assessments and pre-prescribed changes such as time varying sigmas. The OFL, ABC, and ACL under Alternative 1 are shown in Agenda Item C.8, Attachment 2, April 2026. For most stocks this is more likely to prevent overfishing, meanwhile allowing greater realization of economic benefits in cases where BSIA indicates ACLs can be increased compared to No Action. However, the stocks specifically identified below are described in detail because alternative HCRs are considered under Alternative 2 for these stocks, as conservation and socioeconomic goals may not be achieved under the default HCRs. As reference, the stocks discussed under Alternative 1 and Alternative 2 consider the 10-year projection period for unfished biomass relative to the Council's management objective for that type of fish, as detailed in the Council Analytical Document, which is incorporated by reference. The Council's biomass target for rockfish/thornyheads is an unfished biomass of 40 percent (i.e., $B_{40\%}$) and the management objective is 25 percent unfished biomass (i.e., $B_{25\%}$) for flatfish (see Chapter 4 ,PFMC, 2026d).

These "B" reference points are determined relative to an estimate of the "virgin" or unexploited spawning biomass of the stock, denoted as B_0, which is defined as the average equilibrium abundance of a stock's spawning biomass before it is affected by fishing related mortality. B_0 is then used to estimate MSY, as identified in the MSA and National Standard Guidelines. MSY represents a theoretical maximum surplus production from a population of constant size. National Standard Guidelines define it as "the largest long-term average catch or yield that can be taken from a stock or stock complex under prevailing ecological and environmental conditions." For a given population and set of ecological conditions, there is a biomass that produces MSY (denoted as B_{MSY}), which is less than the equilibrium size in the absence of fishing (B_0). The harvest rate used to achieve or sustain B_{MSY} is referred to as the Maximum Fishing Mortality Threshold (MFMT, denoted as F_{MSY}). When the stock biomass is determined to be lower than B_{MSY}, the ACL is set to an adequately low level to rebuild the stock to a healthy level in a timely fashion. The threshold for declaring a stock overfished is when the stock's spawning biomass declines to less than the specified Minimum Stock Size Threshold or MSST (i.e., 12.5 percent of B_0 or $B_{12.5\%}$ for assessed flatfish stocks and $B_{25\%}$ for all other groundfish stocks). Management measures intended to optimize the fishery consistent with the ACLs derived from the default HCRs would be applied under Alternative 1. This includes the array of adjustments to sector allocations or limits and related catch control measures described in Section 2.4.2.

Canary rockfish: The Alternative 1 default HCR is ABC>ACL, P* 0.45, with a 40-10 adjustment. The 40-10 adjustment is a precautionary reduction of the ABC due to the status of the stock. Projections from the stock assessment for 2027 and beyond are based on a spawning potential ratio (SPR) of 50 percent and the 40:10 rule. This HCR results in ACLs of 606 mt and 623 mt in 2027

and 2028, respectively (Table 3). At the start of the 10-year projection period (i.e., 2027), the stock is estimated to be at 34 percent of unfished biomass, which is below the 40 percent unfished biomass ($B_{40\%}$) management target for rockfish, but above the minimum stock size threshold (MSST). Under Alternative 1, the biomass decreases until 2031; however, after 2031, the biomass is projected to increase over the remainder of the 10-year projection period to an estimated 35.3 percent. Thus, while the stock's biomass increases steadily over the projection period (Figure 2), it remains below $B_{40\%}$ (i.e., stays in the precautionary management zone) over the 10-year projection.

Chilipepper: The Alternative 1 default HCR is ABC=ACL, P* 0.45. Projections from the stock assessment for 2027 and beyond are based on $SPR_{50\%}$. This HCR results in coastwide ACLs of 3,211 mt and 3,086 mt for 2027 and 2028, respectively. The coastwide OFLs are apportioned north and south of 40°10' N lat., with seven percent apportioned north of 40°10' N lat. and 93 percent apportioned south of 40°10' N lat. based on average historical landings. Chilipepper is managed in the north under the shelf rockfish complex north of 40°10′ N. lat. and the ACL contributions to this complex are 225 mt and 216 mt for 2027 and 2028, respectively. South of 40°10' N. lat. chilipepper is managed as a single stock. The ACLs south of 40°10′ N. lat. are 2,986 mt and 2,870 mt for 2027 and 2028, respectively (Table 3). This stock is well above $B_{40\%}$ at the start of the projection period, with chilipepper estimated to be at 76.6 percent of unfished biomass in 2027. Under Alternative 1, the coastwide unfished biomass decreases by three percent in the biennium. Further, over the course of the 10-year projection period, the unfished biomass levels continue to decrease, with unfished biomass coastwide at the end of the 10-year period estimated to be at 59 percent (Figure 3).

Rougheye/Blackspotted rockfish: The Alternative 1 default HCR is ABC = ACL, P* 0.40. This HCR results in coastwide ACLs of 844 mt and 827 mt for 2027 and 2028, respectively; however, this stock is managed within the slope rockfish complexes north and south of 40°10′ N. lat. The OFL is apportioned 98 percent to the north and two percent to the south. The Alternative 1 HCR results in an ACL contribution of 827 mt and 810 mt for 2027 and 2028, respectively, to the slope rockfish complex north of 40°10′ N. lat. and contributions of 17 mt and 17 mt for 2027 and 2028, respectively, to the slope rockfish complex south of 40°10′ N. lat. (Table 3). The biomass of this stock is well above the $B_{40\%}$ target, at 88 percent of unfished biomass in 2027 (Figure 4). Within the biennium, the unfished biomass is projected to decrease by 1.2 percent, i.e., from 87.7 percent to 86.5 percent. The coastwide unfished biomass is projected to decrease to 78.6 percent by the end of the projection period.

Widow rockfish: The Alternative 1 default HCR is ABC = ACL, P* 0.45. The Alternative 1 HCR results in coastwide ACLs of 4,596 mt and 4,810 mt for 2027 and 2028, respectively. The unfished biomass of this stock is above $B_{40\%,}$. Under Alternative 1, the estimated unfished biomass in 2027 is expected to decreases by approximately two tenths of a percent over the biennium; however, after 2028, the unfished biomass is expected to begin increasing. The unfished biomass increases from 41.7 percent at the beginning of the ten-year projection period to 46 percent at the end of the projection period. This section will be updated after the April 2026 meeting.

Yelloweye rockfish: The Alternative 1 HCR is ABC = ACL, P* 0.40, SPR 50%. Yelloweye rockfish is currently under a rebuilding plan, however, the stock is at 40.1 percent of unfished biomass in 2025, which is above the management target for rockfish of $B_{40\%}$, thus indicating that

the stock has rebuilt. The SSC noted this stock should no longer considered overfished (Agenda Item G.3.a, supplemental SSC Report 2, September 2025). This HCR results in ACLs of 113 mt and 114 mt for 2027 and 2028, respectively (Table 3). Under Alternative 1, the unfished biomass is estimated at 44.3 percent at the beginning of the 10-year projection period and steadily increases to 50.3 percent by the end of the period. Within the biennium, the assessment (Johnston et al. 2025) estimates the stock's biomass increases from 44.3 percent to 45.7 percent (Figure 5).

Yellowtail rockfish north of 40°10′ N. lat.: The Alternative 1 default HCR is ABC = ACL, P* 0.40. Projections from the stock assessment for 2027 and beyond are based on a $SPR_{50\%}$. This HCR results in ACLs of 4,723 mt and 4,540 mt in 2027 and 2028, respectively (Table 3). The 2025 assessment (Oken et al. 2025) indicated the stock is 62.6 percent of unfished biomass. This HCR maintains a biomass above $B_{40\%}$ throughout the 10-year projection period. The estimated unfished biomass is 58 percent at the beginning of the 10-year projection period and by the end of the period is projected to be 52 percent of unfished biomass (Figure 6).

Shortspine thornyhead. The Alternative 1 default HCR is ABC>ACL, P* 0.45, with a 40-10 rule adjustment. The 40-10 adjustment is necessary for this stock as it is below $B_{40\%}$ but above the MSST. Projections from the stock assessment for 2027 and beyond are based on $SPR_{50\%}$ and the 40-10 rule. This HCR results in ACLs of 847 mt and 856 mt in 2027 and 2028, respectively (Table 3). Within the biennium, the biomass is projected to increase by one tenth of a percent, from 39.3 percent to 39.4 percent. Over the course of the projection period, the unfished biomass is estimated to slightly increase to 40.4 percent (Figure 7), i.e., above the management target of $B_{40\%}$ for thornyheads.

Petrale sole: The Alternative 1 default HCR is ABC = ACL, P* 0.45 and results in ACLs of 2,449 mt and 2,423 mt in 2027 and 2028, respectively (Table 3). Projections are based on an $SPR_{30\%}$. Petrale sole is a highly attained stock and managing it in accordance with the most recent stock assessment may have beneficial impacts to the stock biomass. The target biomass for flatfish is $B_{25\%}$. Under Alternative 1, the unfished biomass is estimated to decrease from 26.6 percent to 26 percent within the biennium. However, the unfished biomass is projected to increase over the 10-year projection period from approximately 26 percent to 28 percent, i.e., above the Council's management target for flatfish. (Figure 8).

Table 3. Overfishing limit (OFL), Acceptable Biological Catch (ABC), Annual Catch Limit (ACL) in metric tons (mt) and the estimated fraction of unfished biomass for stocks considered under Alternative 1.

Stock	Year	OFL (mt)	ABC (mt)	ACL (mt)	Fraction unfished
Canary rockfish	2027	694	643	606	0.340
	2028	721	665	623	0.335
Chilipepper a/	2027	3,434	3,211	3,211	0.766
	2028	3,318	3,086	3,086	0.736
Rougheye/blackspotted rockfish a/	2027	844	844	966	0.877
	2028	826	826	955	0.865
Widow rockfish b/	2027	-	-	4,596	0.417
	2028	-	-	4,810	0.415
Yelloweye rockfish	2027	129	113	113	0.443

Stock	Year	OFL (mt)	ABC (mt)	ACL (mt)	Fraction unfished
	2028	132	114	114	0.457
Yellowtail rockfish north of 40° 10′ N. lat.	2027	5,051	4,723	4,723	0.575
	2028	4,882	4,540	4,540	0.545
Shortspine thornyhead	2027	994	852	847	0.393
	2028	1,014	861	856	0.394
Petrale sole	2027	2,645	2,449	2,449	0.260
	2028	2,628	2,423	2,423	0.257

a/ the harvest specifications for these stocks are presented at the coastwide scale for simplicity.
b/ to be determined

Action Alternative 2

Under Alternative 2, alternative HCRs would be adopted for all stocks identified below, based on BSIA (using the recent stock assessments conducted in 2025). Alternative HCRs are proposed to better achieve conservation and socioeconomic goals in comparison to No Action and Alternative 1. Under this Alternative, default HCRs under Alternative 1, are used for all stocks except those discussed below. The OFL, ABC, and ACL for stocks considered under Alternative 2 HCRs are shown in Table 4. The Council adopted Alternative 2 for these stocks as their PPA in November 2025.

Canary Rockfish: The Alternative 2 HCR differs from Alternative 1 only by the removal of the 40-10 adjustment. This HCR results in ACLs of 643 mt and 664 mt for 2027 and 2028, respectively (Table 4). Within the biennium, under Alternative 2, the unfished biomass is expected to decrease from 34 percent in 2027 to 33.5 percent in 2028. Further, the 2025 catch-only projection (Langseth, 2025) indicates the stock's unfished biomass is projected to decrease under this Alternative to a low of 32.5 percent in 2031, but then to begin to increase steadily over the remainder of the 10-year projection period (see Figure 2 in Section 4.1.3) to an estimated 35.1 percent (Table 4) at year 10. While the stock's biomass increases over the projection period under Alternative 2, the unfished biomass is projected to remain below $B_{40\%}$ (i.e., stays in the precautionary management zone) over the entire 10-year projection.

Chilipepper: The Alternative 2 HCR is a constant catch ACL of 2,114 for both years of the biennium (Table 4). Alternative 2 is the long-term equilibrium yield based on $SPR_{50\%}$ for 2027-2028. Post this biennium, the ACL would revert back to the Alternative 1 default HCR. As noted above, chilipepper OFLs are apportioned seven percent north of 40°10′ N. lat. and 93 percent south of 40°10′ N. lat. The chilipepper contribution to the shelf rockfish complex north of 40°10′ N. lat. under this Alternative would be 148 mt in both 2027 and 2028. The Alternative 2 ACL for chilipepper north of 40°10′ N. lat. is 1,966 mt in both 2027 and 2028. Within the biennium, the unfished biomass under Alternative 2 is expected to decrease from 76.6 percent in 2027 to 75.8 percent in 2028. Over the course of the 10-year projection period the unfished biomass of chilipepper is projected to remain above $B_{40\%}$ but decrease from a projected 76.6 percent to 60.2 percent (Figure 3).

Rougheye/Blackspotted rockfish: The Alternative 2 HCR is a phase in approach setting a constant coastwide ACL of 300 mt (the maximum mortality reported in Somers et al, 2025) for

2027-28 only. Post this biennium, the ACL would revert back to the Alternative 1 default HCR. The rougheye/blackspotted rockfish OFL is apportioned 98 percent to the north and two percent to the south of 40°10′ N. lat. Alternative 2 would result in an ACL contribution of 294 mt and 6 mt to the north and south of 40°10′ N. lat. slope rockfish complexes, respectively, for each year of the biennium (Table 4). The biomass of this stock is well above the $B_{40\%}$ target, at 88 percent of unfished biomass in 2027. Within the biennium, the projected unfished biomass does not change, i.e., stays at 88 percent for both years. Under Alternative 2, the unfished biomass is expected to steadily decrease from approximately 88 to 80 percent, but to remain above $B_{40\%}$ unfished biomass over the ten-year projection period (Figure 4).

Widow rockfish: A range of alternative HCRs has not yet been selected and is still under consideration by the Council at the time of this writing. This stock will be updated at a later date.

Yelloweye rockfish: The Alternative 2 HCR is a constant catch of 85 mt for both years of the biennium. This constant catch amount is the middle ground between the 2026 ACL of 56.6 mt and the 2027 ACL Alternative 1 default HCR ACL of 113 mt. Post this biennium, the ACL would revert back to the Alternative 1 default HCR. Under Alternative 2, the unfished biomass is projected to increase within the biennium, from 44.3 percent to 45.9 percent (Table 4). The unfished biomass is projected increase to 50.8 percent over the course of the 10-year projection under Alternative 2

Yellowtail rockfish north of 40°10′ N. lat.: The Alternative 2 HCR is a phase-in approach, with ABC = ACL of 5,050 mt in 2027. In 2028, the midpoint of the newly calculated OFL and ABC/ACL would be used to calculate the ACL of 4,730 mt for 2028, with ABC = ACL (Table 4). Under this Alternative, the unfished biomass in 2027 is estimated at 58 percent and, at the end of the 10-year projection, it is estimated at 52 percent. The unfished biomass is projected to decrease within the biennium from 58 percent to 54 percent (Figure 6). The first year of this HCR results in an ABC/ACL one metric ton lower than the OFL, whereas, in 2028, there is 129 mt between the OFL and ABC/ACL (Table 4).

Shortspine thornyhead: The Alternative 2 HCR is a phase in approach used to set a constant ABC = ACL of 902 mt (i.e., the ABC for 2026), for 2027-28 only (Table 4). The HCR would then revert back to the default HCR. Within the biennium, under this Alternative, the unfished biomass is expected to remain static for both years at 39.3 percent (Table 4). Under Alternative 2, the stock is projected to increase over the 10-year projection period by a percentage point, from 39.3 percent to slightly above 40.3 percent.

Petrale sole: The Alternative 2HCR is a phase in approach that sets a constant ACL of 2,489 mt for both 2027 and 2028 (Table 4). Post this biennium, the ACL would revert back to the Alternative 1 default HCR. The constant catch ACL is the same ACL amount adopted for 2026 under the emergency rule. At the start of the biennium, the unfished biomass for petrale sole is projected at 26 percent. Within the biennium, under Alternative 2, the unfished biomass is expected to decrease from 26 percent to 25.6 percent; however, that amount is still above the biomass target of $B_{25\%}$. By the end of the 10-year projection period, unfished biomass is projected at 28 percent. Overall, under this Alternative, the stock's unfished biomass remains above $B_{25\%}$ and increases over the projection period (Figure 8).

Table 4. Overfishing limit (OFL), Acceptable Biological Catch (ABC), and Annual Catch Limit (ACL) in metric tons (mt) and the estimated fraction of unfished biomass for stocks considered under Alternative 2.

Stock	Year	OFL (mt)	ABC (mt)	ACL (mt)	Fraction Unfished
Canary rockfish	2027	694	643	643	0.340
	2028	720	664	664	0.335
Chilipepper a/	2027	3,434	3,211	2,114	0.766
	2028	3,409	3,170	2,114	0.758
Rougheye/blackspotted rockfish a/	2027	966	844	300	0.87
	2028	967	836	300	0.87
Widow rockfish b/	2027	-	-	-	-
	2028	-	-	-	-
Yelloweye rockfish	2027	129	113	85	0.443
	2028	132	114	85	0.459
Yellowtail rockfish north of 40° 10′ N. lat.	2027	5,051	5,050	5,050	0.575
	2028	4,859	4,730	4,730	0.542
Shortspine thornyhead	2027	994	902	902	0.393
	2028	1013	902	902	0.393
Petrale sole	2027	2,645	2,489	2,489	0.260
	2028	2,619	2,489	2,489	0.256

a/ the harvest specifications for these stocks are presented at the coastwide scale for simplicity.
b/ to be determined

4.1.3 Synthesis - Comparative Effects of the Alternatives on Managed Fish

The combination of HCRs and management measures proposed by the Council and NMFS is intended to allow groundfish fisheries to (1) set ACLs that optimize the fishery while preventing overfishing, and (2) attain but not exceed these ACLs during the 2027-28 biennium while optimizing the fishery in other ways (e.g., by considering the distribution of fishing opportunity across sectors). While in this evaluation we assume that realized catch equals the ACL, as discussed below, historically catch in the Pacific Coast groundfish fisheries has been well below ACLs for most groundfish stocks. Further, as discussed in Section 2, the ABC represents a precautionary reduction from the OFL for each stock, making it unlikely that overfishing would occur. ACLs are generally set equal to the ABC, unless additional conservation and management concerns dictate that an ACL be set below the ABC.

Application of the default and alternative HCRs described in Alternatives 1 and 2 result in lower ACLs as compared to No Action for most stocks. The GMT Scorecard shows that in 2025 attainment was below ACLs, in many cases substantially, for all management units. If similar patterns persist in the 2027-28 biennium, the actual impact of fishing mortality on the future status of most stocks and stock complexes is likely to be less than forecasted in the assessment projections, as described above in this Analysis (see Section 4.1.2). Still, the No Action Alternative could result in overfishing because the harvest specifications would not be based on BSIA and management measures would not be adjusted to address conservation concerns and optimize the fishery. By contrast, the proposed catch limits described under Alternatives 1 and 2 would achieve

the conservation objectives articulated by MSA National Standard 1 Guidelines and the Groundfish FMP.

Our management measures (adjustments in the allocation of fishing opportunity, catch controls, inseason monitoring and management, near-real time accounting, etc.) ensure that the fisheries do not exceed their allocated limits. Therefore, the combination of HCRs and management measures under this Proposed Action, when based on BSIA, would not result in significant impacts to managed fish. Overall, constraining catch consistent with the results of the most recent stock assessments is likely to produce beneficial impacts on the stock in terms of it moving towards $B_{40\%}$ or $B_{25\%}$ over the projection period, in this case ten years. $B_{40\%}$ and $B_{25\%}$ reflect reference points developed by the Council for rockfish and flatfish, respectively, to ensure sustainability and produce MSY. As such, they are targets for achieving the dual goals of conserving stocks and optimizing the fishery. An unfished biomass level of 25 percent ($B_{25\%}$) and an unfished biomass level of 40 percent ($B_{40\%}$) are considered reasonable proxies for B_{MSY} for west coast flatfish and other groundfish species, which include rockfish and thornyheads.

The effects of implementing Alternatives 1 and 2 would be similar, with the exception of the stocks for which alternative HCRs are proposed under Alternative 2. Therefore, the following relates information germane to decision making by comparing Alternative 1 and Alternative 2, with respect to those stocks. Table 5 specifically reports a comparison between Alternative 1 and Alternative 2 ACLs.

Canary rockfish: Under Alternative 1, the buffer between the ACL and the OFL is approximately 20 mt higher than under Alternative 2 in both years of the biennium. Under Alternative 2, the 40-10 adjustment is removed and ACLs increase by 37 mt and 41 mt for 2027 and 2028 (Table 4), respectively, over Alternative 1. The removal of the 40-10 rule under Alterative 2 slightly changes the trajectory of the stock overtime relative to Alternative 1; meaning the stock's unfished biomass increases at a slower rate under Alternative 2 respective to Alternative 1. It is important to note, however, that neither Alternative results in $B_{40\%}$ being achieved for this stock in the 10-year projection period. The spawning output and depletion trajectories (Figure 2) are similar under both Alternatives over the 10-year projection period and the stock remains in the precautionary zone under either Alternative, even though Alternative 1 permits a lower amount of harvest in 2027 and 2028. Under both Alternatives, the unfished biomass increases over the 10-year projection period; however, under Alternative 2, the unfished biomass increases at slightly slower rate than under Alternative 1. At the end of the 10-year projection, the unfished biomass is 35.3 percent under Alternative 1 and 35.1 percent under Alternative 2. Within the biennium, Alternative 2 and Alternative 1 have identical unfished biomass percentages. In summary, the choice between Alternatives will not impact the overall stock status in the projection period. On the other hand, Alternative 2 provides more yield to the fishery, which may offer some opportunity and operational flexibility for fishery participants over Alternative 1. Further, as indicated in the above comparisons, it is unlikely either Alternative will result in overfishing as the unfished biomass remains greater than $B_{25\%}$ (i.e., MSST) over the entire projection period.

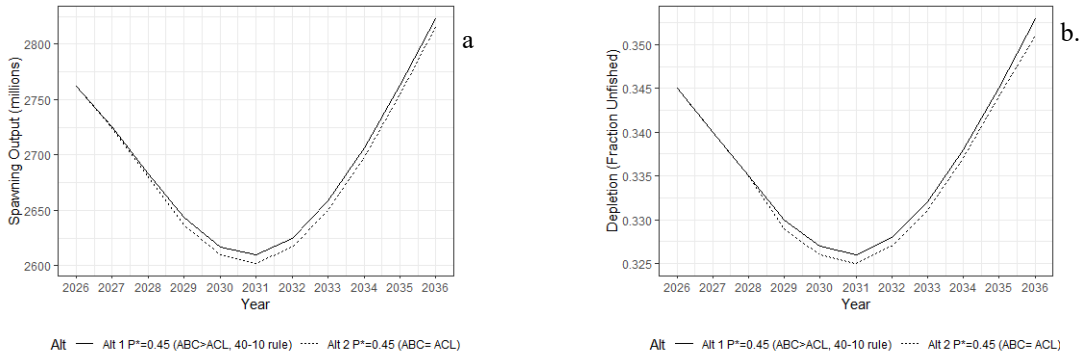


Figure 2. (a.) Projected spawning output (millions of eggs) of canary rockfish under Alternative 1 and Alternative 2 HCRs, 2026-36 (b.) Projected depletion (fraction unfished) of canary rockfish under Alternative 1 and Alternative 2, 2026-36.

Chilipepper: At the coastwide scale, the Alternative 1 ACLs are 1,097 mt and 972 mt higher in 2027 and 2028, respectively, than the Alternative 2 ACLs. At the management scale, under Alternative 1, the north of 40°10′ N. lat. ACLs are 77 mt and 66 mt higher in 2027 and 2028, respectively, than under Alternative 2. South of 40°10′ N. lat., the Alternative 1 ACL is 1,020 mt and 904 mt higher in 2027 and 2028, respectively, than under Alternative 2 (Table 4). At the start of the projection period (i.e., 2027), chilipepper is at 76.6 percent unfished biomass under both Alternatives. Under Alternative 1, the 10-year projection shows unfished biomass at 59 percent at the terminal end of the projection period; whereas, under Alternative 2, the unfished biomass is 60 percent at year 10. Accordingly, Alternative 2 is more precautionary and may have slightly more positive benefits to the stock biomass than Alternative 1. Under Alternative 2, at the coastwide scale, the buffer between the ACL and the OFL is approximately 1,000 mt higher than under Alternative 1 in both years of the biennium. For both Alternatives 1 and 2, the spawning output and depletion trajectories (Figure 3) are similar under both Alternatives over the projection period. Under Alternative 2, the stock is at a higher stock status over the time series due to the lower harvest in 2027 and 2028. Regardless, both alternatives stay above the management target and the choice between Alternatives will not impact the overall stock status in the projection period. Additionally, Alternative 2 ACLs are more reflective of the current fishery (Agenda Item F.3.a, Supplemental GMT Report 1, November 2025), and because Alternative 2 results in ACLs that are more reflective of the current fishery than Alternative 1, there is no operational advantage expected from the increased ACLs that would occur under Alternative 1. Therefore, a precautionary approach would not limit the fishery for this stock (i.e., prevent optimization).Further, the above indicates that it is unlikely that either Alternative will result in overfishing as the stock's unfished biomass remains well above the $B_{25\%}$ (i.e., MSST) threshold over the entire projection period under both Alternatives.

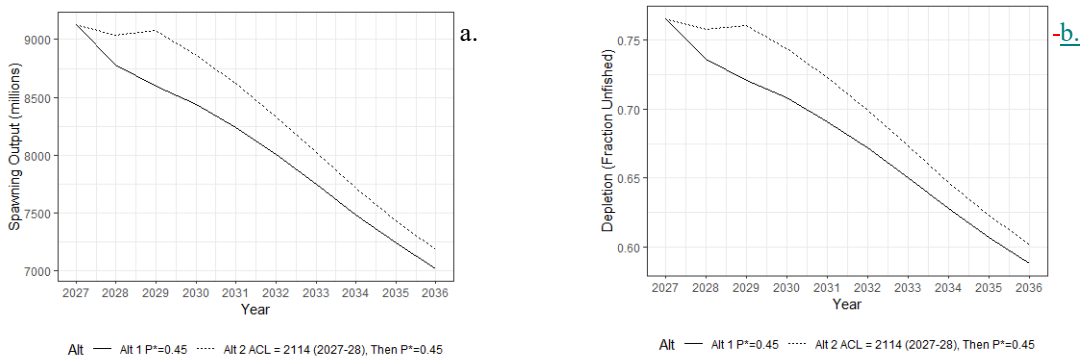


Figure 3. (a) Projected spawning output (millions of eggs) of chilipepper under Alternative 1 and Alternative 2 HCRs, 2026-36 (b.) Projected depletion (fraction unfished) of chilipepper under Alternative 1 and Alternative 2 , 2026-36.

Rougheye/Blackspotted rockfish: The ACL contribution to the rockfish complex north of 40°10′ N. lat. is 970 mt and 792 mt higher under Alternative 1 than under Alternative 2 for 2027 and 2028, respectively (Table 4). The ACL contribution to the rockfish complex south of 40°10′ N. lat. is 682 mt and 678 mt higher under Alternative 1 than under Alternative 2 for 2027 and 2028, respectively. Under Alternative 1, the unfished biomass is projected to be at 78.6 percent at the end of the 10-year projection period; whereas, under Alternative 2, the unfished biomass is projected to be 80 percent. The unfished biomass of the stock is therefore projected to remain above $B_{40\%}$ over the projection period for either alternative. Alternative 2 has less impact to the stock's unfished biomass than Alternative 1 and, at the end of the projection period, results in a slightly higher estimated biomass. The Alternative 2 HCR is precautionary and may mitigate against the uncertainty of the 2025 assessment (Cope et al, 2025, Agenda Item F.3.a, Supplemental GMT Report 1, November 2025). Alternative 2 is therefore more precautionary than Alternative 1 in respect to biological impacts. The buffer between the ACL and the OFL under Alternative 2 is approximately six times larger than under Alternative 1. For both Alternatives 1 and 2, the spawning output and depletion trajectories (Figure 4) are similar over the ten-year projection period. However, Alternative 2, with the lower amount of harvest in 2027 and 2028, does result in higher spawning output and depletion as compared to Alternative 1 over the time series. Overall, the choice between Alternatives is not expected to impact the overall stock status in the projection period. Based on the unfished biomass projections, it is unlikely that either Alternative will result in overfishing as the stock's unfished biomass remains well above the $B_{25\%}$ (i.e., MSST) threshold over the entire projection period under both Alternatives. Additionally, there are no operational advantages for the fishery expected from the higher ACLs under Alternative 1. Therefore, a precautionary approach would not limit the fishery for this stock (i.e., prevent optimization) and is proposed.

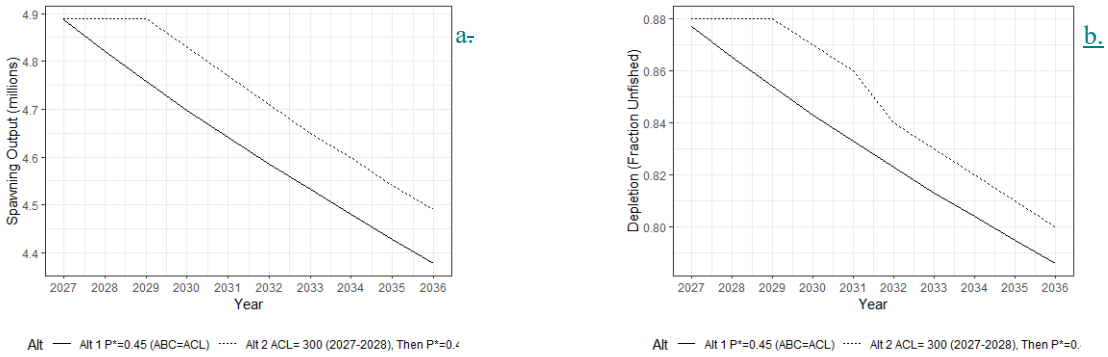


Figure 4. (a) Projected spawning output (millions of eggs) of rougheye/blackspotted rockfish under Alternative 1 and Alternative 2 HCRs, 2026-36 (b.) Projected depletion (fraction unfished) of rougheye/blackspotted rockfish under Alternative 1 and Alternative 2, 2026-36.

Yelloweye rockfish: The Alternative 2 ACLs are 28 mt and 29 mt less than Alternative 1 for 2027 and 2028, respectively (Table 4). The unfished biomass is estimated at 44.3 percent at the start of the biennium under both alternatives. By the end of the 10-year projection period, the unfished biomass under Alternative 1 is projected to be at 50.3 percent, whereas, under Alternative 2, the unfished biomass is projected to be 50.8 percent. While the difference in impacts to biomass at the end of the projection period may be minimal, Alternative 2 is a more precautionary approach to biomass depletion at the beginning of the projection period. The Alternative 2 ACLs for 2027 and 2028 , while lower than under Alternative 1, may provide some relief to industry, while balancing a precautionary approach for stock recovery from the overfished state, because the Alternative 2 ACLs would promote stability for the fishery (Agenda Item F.3.a, Supplemental GMT Report 1, November 2025). The Alternative 2 ACLs, though lower than the Alternative 1 ACL, is approximately 30 mt higher than No Action. This 35 percent increase may offer more flexibility to industry as constraints on the fishery may be relaxed to account for increased yelloweye biomass. For both Alternatives 1 and 2, the spawning output and depletion trajectories (Figure 5) are similar over the projection period. Under Alternative 2, the stock ends up at a higher biomass at year 10 due to the lower harvest in 2027 and 2028. However, the choice between Alternatives would not impact the overall stock status in the projection period. Thus, while Alternative 1 provides more yield to the fishery, which could offer some increased opportunity and operational flexibility over Alternative 2, Alternative 2 is proposed because it promotes stability in the fishery over time. As indicated above, it is unlikely that either Alternative will result in overfishing as the stock's unfished biomass remains about double of the $B_{25\%}$ (i.e., MSST) threshold over the entire projection period under both Alternatives.

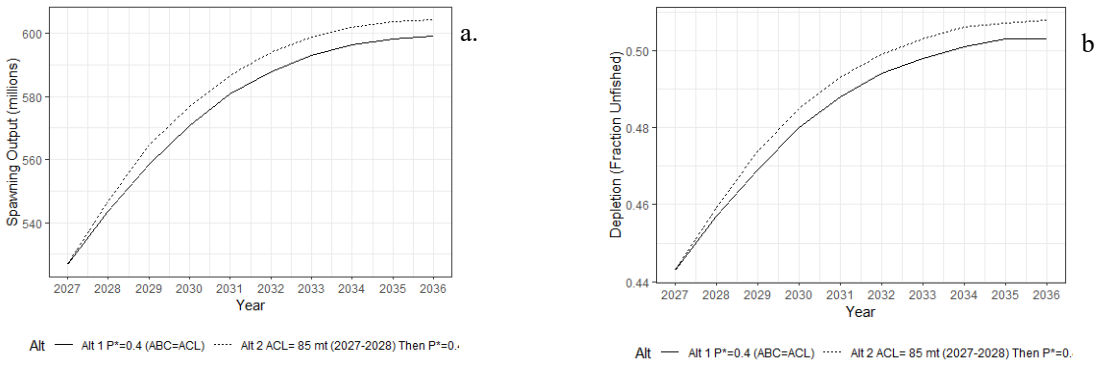


Figure 5. (a) Projected spawning output (millions of eggs) of yelloweye rockfish under Alternative 1 and Alternative 2 HCRs, 2026-36 (b.) Projected depletion (fraction unfished) of yelloweye rockfish under Alternative 1 and Alternative 2, 2026-36.

Yellowtail rockfish north of 40°10′ N. lat.: Under Alternative 2, the ACLs are 337 mt and 190 mt higher in 2027 and 2028, respectively, than under Alternative 1 (Table 4). Under the Alternatives, the initial unfished biomass is 58 percent and, at the end of the projection period, the unfished biomass is 52 percent and 51.9 percent for Alternative 1 and Alternative 2, respectively. The difference in unfished biomass between the two Alternatives on the stock is 0.1 percent, which is a negligible difference. A key difference between the Alternatives is that the Alternative 2 HCR is set one metric ton lower than the OFL for 2027. However, Alternative 2 would not be expected to result in overfishing as the Council closely monitors catch of managed species and, if needed, could take inseason action to adjust the fishery so as to achieve but not exceed the ACL, and thus prevent overfishing, at any one of five annual meetings. For both Alternatives 1 and 2, the spawning output and depletion trajectories are similar over the projection period (Figure 6).. Under Alternative 2, the stock is at a lower stock status for the majority of the time series due to the higher harvest in 2027 and 2028, but overall stays in a similar state as Alternative 1 over the 10-year period. Therefore, the choice between Alternatives will not impact the overall stock status over the projection period. In terms of impacts on fishery participants, by year ten of the projection period, the yellowtail north of 40°10′ N. lat. ACL under Alternative 1 would be nine metric tons higher than the Alternative 2 ACL. Alternative 2 is proposed, however, because it would provide more yield to the fishery in 2027 and 2028, which would offer increased opportunity and operational flexibility early in the projection period. It is unlikely that either Alternative will result in overfishing as the stock's unfished biomass remains about double of the $B_{25\%}$ (i.e., MSST) threshold over the entire projection period under both Alternatives regardless of HCRs.

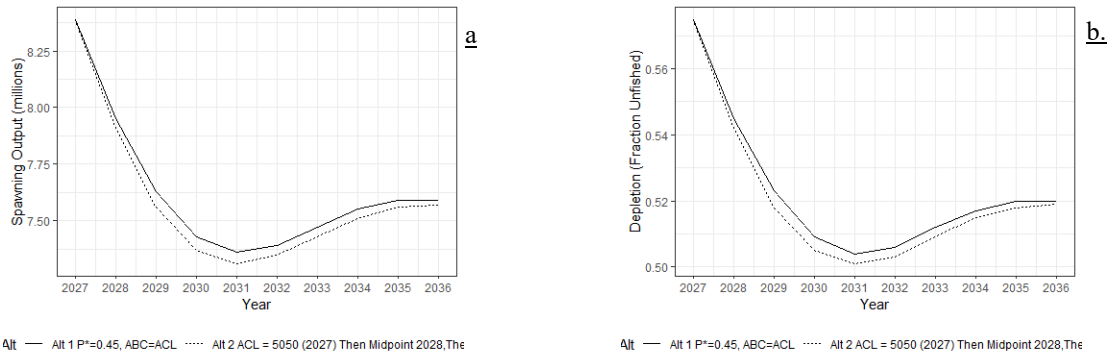


Figure 6. (a) Projected spawning output (millions of eggs) of yellowtail rockfish north of 40°10′ N. lat. under Alternative 1 and Alternative 2 HCRs, 2026-36 (b.) Projected depletion (fraction unfished) of yellowtail rockfish north of 40°10′ N. lat. under Alternative 1 and Alternative 2, 2026-36.

Shortspine thornyhead: The ACLs under Alternative 2 are 50 mt and 46 mt higher in 2027 and 2028, respectively, than under Alternative 1 (Table 4). At the end of the projection period, Alternative 1 results in a 0.1 percent higher estimated unfished biomass than under Alternative 2. In both cases, the stock is projected to reach B_{40}% at the end of the projection period. For both Alternatives 1 and 2, the spawning output and depletion trajectories are similar over the 10-year projection period. Thus, the choice between Alternatives will not impact the overall stock status in the projection period. Even though the stock is in the precautionary zone, Alternative 2 permits a higher amount of harvest in 2027 and 2028. Therefore, because the choice is not expected to

impact overall stock status, Alternative 2 is proposed as it would provide more yield to the fishery, which offers increased opportunity and operational flexibility. Both Alternatives are unlikely to result in overfishing as the biomass remains above $B_{25\%}$ (i.e., MSST) threshold over the entire projection period under the Alternatives.

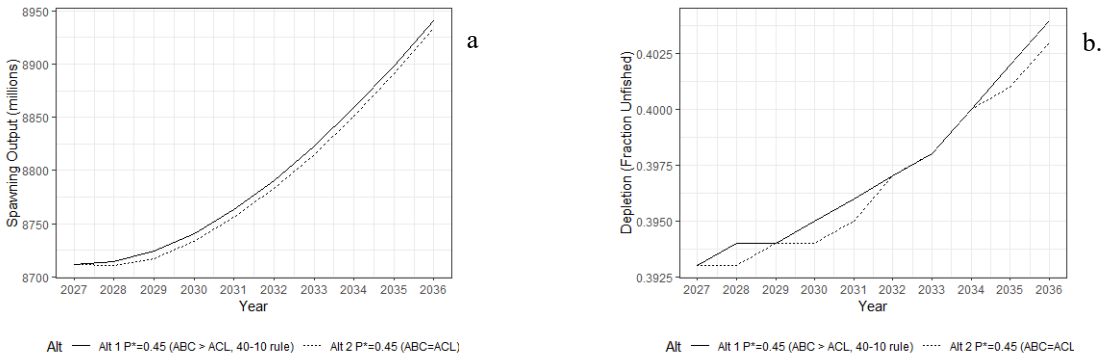


Figure 7. (a) Projected spawning output (millions of eggs) of shortspine thornyhead under Alternative 1 and Alternative 2 HCRs, 2026-36 (b.) Projected depletion (fraction unfished) of shortspine thornyhead under Alternative 1 and Alternative 2, 2026-36.

Petrale sole: The ACLs under Alternative 2 are 40 mt and 66 mt higher than under Alternative 1 (Table 4). The unfished biomass is estimated at 26 percent at the start of the biennium under both alternatives. There is an approximately 70 mt larger buffer between the ABC/ACL and OFL under Alternative 1 than under Alternative 2, which could decrease the risk of overfishing. Additionally, under Alternative 2, with the higher amount of harvest in 2027 and 2028, unfished biomass is projected to remain below the Alternative 1 estimate until 2034. However, by the end of the 10-year projection period, the projected difference between unfished biomass under the Alternatives is null. Biomass increases under both Alternatives. Moreover, for both Alternatives, the spawning output and depletion trajectories are similar over the ten-year projection period, and the stock remains above $B_{25\%}$ (Figure 8). Therefore, the choice between Alternatives will not impact the overall stock status over the projection period. It is unlikely that either Alternative will result in overfishing as the stock's unfished biomass remains above the $B_{12.5\%}$ (i.e., MSST) threshold for flatfish over the entire projection period under the Alternatives Alternative 2 is therefore proposed because it would provide slightly increased yield to the fishery in 2027 and 2028, which may offer some opportunity and operational flexibility over Alternative 1.

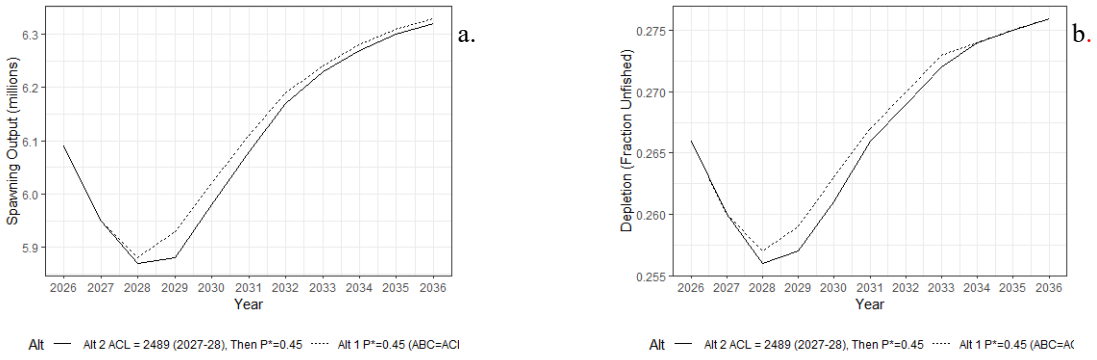


Figure 8. (a) Projected spawning output (millions of eggs) of petrale sole under Alternative 1 and Alternative 2 HCRs, 2026-36 (b.) Projected depletion (fraction unfished) of petrale sole under Alternative 1 and Alternative 2, 2026-36.

Table 5. Comparison between Alternative 1 and Alternative 2 Annual Catch Limits (ACL)s, the difference in metric tons (mt), and the percent increase or decrease of the Alternative 2 ACL relative to Alternative 1.

Stock	Year	Alt 1 ACL (mt)	Alt 2 ACL (mt)	Difference (mt)	% increase/ decrease
Canary rockfish	2027	606	643	+37	+6.1%
	2028	623	664	+41	+6.6%
Chilipepper	2027	3,211	2,114	-1,097	-34.2%
	2028	3,086	2,114	-972	-31.5%
Rougheye/blackspotted rockfish	2027	966	300	-666	-68.9%
	2028	955	300	-655	-68.6%
Widow rockfish a/	2027	-	-	-	-
	2028	-	-	-	-
Yellowtail rockfish north of 40° 10′ N. lat.	2027	4,723	5,050	+327	+6.9%
	2028	4,540	4,730	-190	+4.2%
Yelloweye rockfish	2027	113	85	-28	-24.8%
	2028	114	85	-29	-25.4%
Shortspine thornyhead	2027	847	902	+55	+6.5%
	2028	856	902	+46	+5.4%
Petrale sole	2027	2,449	2,489	+40	+1.6%
	2028	2,423	2,489	+66	+2.7%

a/ to be determined

4.2 Protected Resources

4.2.1 Status/Affected Environment

Several Federal laws protect mammals, reptiles, fish, and birds. These laws include the Endangered Species Act (ESA), the Marine Mammal Protection Act (MMPA), the Migratory Bird Treaty (MBTA), and Executive Order (EO) 13186—EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds.

The Services (NMFS and the U.S. Fish and Wildlife Service, FWS) have issued Biological Opinions and Incidental Take Statements (ITSs) for ESA-listed species that the groundfish fishery may affect. The Services have concluded that the fishery is unlikely to jeopardize any of these species or their critical habitat. In 2025, an informational report and data (Informational Report 3a and Report 3b, June 2025) submitted by the Northwest Fisheries Science Center's (NWFSC) Fishery Observation Science Program to the Council, which we incorporate by reference, provided the most recent information regarding the fishery impacts on these species. Report 3a, identifies each Biological Opinion and presents the current incidental take allowances and the estimated take from the most recent bycatch reports for humpback whales and leatherback sea turtles (Somers et al, 2025), short-tailed albatross (Good et al, 2023), eulachon (Gustafson et al, 2023), and green sturgeon (Richerson, 2024).

The reports confirm that the fishery generally has minimal interactions with these ESA-listed species and that the fishery has not exceeded any of the current incidental take statement amounts. A workgroup continues to monitor the impacts of the fishery and recommend to us, where appropriate, refinements to reduce uncertainty and impacts.

The Services have determined the groundfish fishery would not adversely affect other ESA-listed species (except for salmon discussed below) not presented in Report 3a.[7] Therefore, this impact analysis does not further address these unaffected species. On November 22, 2024, NMFS issued a Biological Opinion analyzing the effects of ongoing implementation of the Groundfish FMP on the endangered Central America distinct population segment (DPS) and threatened Mexico DPS of humpback whales, and on endangered leatherback sea turtles (NMFS,2024). The Opinion concluded that continued implementation of the Groundfish FMP is likely to adversely affect ESA-listed humpback whales and leatherback sea turtles, but it is unlikely to jeopardize the species or their proposed critical habitat.

On August 2, 2021, NMFS issued a final rule (86 FR 41668) revising the southern resident killer whale critical habitat designation by expanding it to include habitat along the U.S. West Coast. On September 28, 2022, NMFS initiated consultation on the Pacific coast groundfish fishery for southern resident killer whales. As there is no documented take of southern resident killer whales in the Pacific coast groundfish fishery (see List of Fisheries below), the primary potential for impacts to newly designated critical habitat are indirect effects from the take of Chinook salmon, a prey species. On December 7, 2022, NMFS concluded the ongoing operation of the Pacific Coast groundfish fishery is not likely to adversely affect southern resident killer whales.

Historically, salmon bycatch in groundfish fisheries has mostly comprised Chinook salmon with small amounts of coho salmon. This bycatch has been subject to ESA consultations since 1990. In the 2017 Biological Opinion (NMFS, 2017), incidental take is described in numbers of both listed and non-listed salmon. Incidental take of Chinook may not exceed 11,000 salmon per year in the whiting sector and 5,500 in the non-whiting sector, in addition to a reserve of 3,500 Chinook salmon per year in the event that bycatch increases unexpectedly. The coho salmon bycatch will not exceed 474 coho (whiting) or 560 coho (non-whiting) per year. On February 23, 2021, NMFS published a final rule implementing salmon bycatch minimization measures to keep fishery sectors within these guidelines, to allow industry to access the Chinook salmon bycatch reserve, and to create Chinook salmon bycatch closure thresholds for the trawl fishery (86 FR 10857).

The GMT regularly presents the Council with a Chinook Salmon Scorecard under groundfish inseason management agenda items (for example, D.5.a, Supplemental GMT Report 1, March 2025). This allows for tracking of estimated or assumed bycatch against expected incidental take presented in the Incidental Take Statement attached to the Biological Opinion. The NWFSC's most recent report (Richerson et al, 2026) was presented to the Council in March 2025 (Agenda Item D.1.b, NWFSC Report 1, March 2026). The fishery has not exceeded the limits defined in the 2017 Opinion since its publication.

[7] For example, in their May 2, 2017, Biological Opinion, FWS confirmed that the fishery is not likely to adversely affect marbled murrelet, California least tern, southern sea otter, bull trout, nor bull trout critical habitat.

While the ESA protects threatened or endangered marine mammals, the MMPA protects all marine mammals. Under the MMPA, all commercial fisheries must be categorized based on the estimated incidental mortality and serious injury (M/SI) resulting from their operations relative to the potential biological removal (PBR) level for each marine mammal stock. NMFS annually publishes the List of Fisheries, which classifies fisheries according to their impact on marine mammal stocks: Category I: Annual M/SI greater than or equal to 50 percent of the PBR level; Category II: M/SI greater than 1 percent and less than 50 percent of the PBR level; Category III: M/SI less than or equal to 1 percent of the PBR level.

The 2025 List of Fisheries (89 FR 87322) [8] classifies Groundfish FMP fisheries and lists marine mammal stocks taken in the groundfish fisheries as follows:

- WA/OR/CA sablefish pot (Category II): Humpback whale (Central America/Southern Mexico and Mainland Mexico), CA/OR/WA
- WA/OR/CA groundfish, bottomfish longline/set line fishery (Category III): bottlenose dolphin (CA/OR/WA offshore), California sea lion (U.S.), Northern elephant seal (California breeding), Sperm whale (CA/OR/WA), Stellar sea lion (Eastern U.S.).
- WA/OR/CA groundfish trawl (Category III): California sea lion (U.S.), Dall's porpoise (CA/OR/WA), harbor seal (OR/WA coast), northern elephant sea (CA breeding), northern fur seal (Eastern Pacific), northern right whale dolphin (CA/OR/WA), white-sided dolphin (CA/OR/WA), and Steller sea lion (Eastern U.S.).
- WA/OR/CA groundfish/finfish hook and line (Category III): California sea lion (U.S.), Humpback whale, Central America/Southern Mexico-CA/OR/WA, Humpback whale, Mainland Mexico-CA/OR/WA.
- AK/WA/OR/CA commercial passenger fishing vessel (Category III): Humpback whale, (Central America/Southern Mexico-CA/OR/WA), Humpback whale (Mainland Mexico-CA/OR/WA), Humpback whale (Western North Pacific), killer whale, Stellar sea lion (Eastern and Western U.S.).

Section 3.5 of the 2015 EIS describes the fishery's anticipated impacts on these stocks.

Additionally, NMFS publishes marine mammal stock assessment reports (SARs) by region. Each assessment describes the status and biology of the stocks along with sources of human-caused and fishery-caused M/SI. The most recent draft Pacific SAR (Carretta, *et al.* 2024) reports and summarizes population status indicators and total/fishery M/SI in Appendix 2. Relevant to the groundfish fishery, the 2024 report revised the information for the southern resident killer whale only.

The West Coast Groundfish Observer Program (WCGOP) estimates and periodically reports bycatch of protected species, including marine mammals and seabirds, compiled from observer, landings, and electronic monitoring data. These reports are published on the NOAA Fisheries

[8] The 2024 proposed List of Fisheries has the same classification (88 FR 62748).

website: West Coast Fishery Observer Bycatch and Mortality Reports. The most recent marine mammal report (Jannot, *et al.* 2022) covers 2002 to 2019.

On September 29, 2023 (88 FR 67254), NMFS announced it is establishing, pursuant to the MMPA, a Take Reduction Team (TRT) to address humpback whale M/SI in the sablefish pot fishery. The TRT will develop a Take Reduction Plan (TRP) as required under the MMPA §118(f)(1) to assist in the recovery or prevent the depletion of the aforementioned DPSs. NMFS initiated formation of the TRT pursuant to litigation (90 FR 49837). On November 4, 2025, NMFS published a notice establishing the TRT to address the incidental M/SI of the Central America/Southern Mexico-CA/OR/WA stock and Mainland Mexico-CA/OR/WA stock of humpback whales in the WA/OR/CA sablefish pot fishery (90 FR 49237) The TRT has since held three virtual meetings and will hold one in-person meeting between November 2025 and April 2026. A draft TRP must be submitted within 6 or 11 months of establishment of the TRT, depending on the level of M/SI compared to a stock's PBR. TRT recommendations are aimed at reducing fishery M/SI below PBR within six months of plan implementation and achieving the ZMRG (Zero Mortality Rate Goal or 10 percent of PBR) within five years of implementation. It is uncertain whether mitigation measures identified in the TRP would be implemented during the 2027-28 biennium.

NMFS recently published a proposed rule (91 FR 5408) on expanded gear marking requirements and other entanglement risk reduction measures for vessels that operate under the Groundfish FMP that use pot and longline gear. These new measures are expected to be implemented during the 2027-28 biennium.

Section 3.5.4 and Table 3-42 of the 2015 EIS describe the fishery's anticipated impacts on non-ESA-listed seabirds and provide future mortality estimates.

The most recent WCGOP seabird bycatch report (Jannot, *et al.* 2021) covers seabird interactions from the groundfish and Pacific halibut fisheries as well as selected State fisheries from 2002 to 2018. The report finds that:

> Hook-and-line fisheries account for the largest number of albatrosses taken among the three gear categories (hook-and-line, trawl, pot). Over the last six years, hook-and-line fisheries accounted for 50–63 percent of seabird mortality, followed by trawl fisheries at 31–45 percent, and pot fisheries at 2–6 percent of bycatch (Table 1.) The largest number of albatross taken comes from limited entry (LE) sablefish vessels fishing hook-and-line gears. This prompted regulations requiring streamer lines on hook-and-line vessels fishing in U.S. West Coast groundfish fisheries; these were implemented in December 2015 for vessels 55 ft or longer.

In 2019, based on a Council proposal, NMFS extended the streamer line requirement to vessels 26-55 feet length overall (LOA) (84 FR 67674).

No short-tailed albatross (ESA-listed) has been observed caught in the groundfish fishery since we published the 2015 EIS.

Pages 19-33 of WCGOP seabird bycatch report present albatross and non-albatross bycatch data for selected groundfish fixed gear and trawl fisheries, summarized by sector:

- Black-footed albatross were the main species caught in the **limited entry (LE) sablefish endorsed fishery**, which uses longlines. Since 2015, estimated annual mortality in this fishery exceeds five for three non-albatross species (sooty shearwaters, northern fulmars, and western gulls) (Table 6) with all annual estimates for each species being less than 10 birds, except sooty shearwater (20.75 in 2018).
- **Limited entry daily trip limits (DTL) longline vessels** target groundfish, primarily sablefish and thornyheads. These vessels have attained their annual sablefish quota limit and fish outside the normal LE sablefish season. On average, 3-4 pink-footed shearwaters are estimated to be caught each year in this fishery (Table 7).
- **Open access (OA) fixed gears** use a variety of fixed gear with hooks, including longlines, fishing poles, and stick gear to target non-nearshore groundfish. Two bird taxa have been reported and estimated (Table 8): black-footed albatross (estimate 6-11) and unidentified gulls (estimate 3-5).
- **Catch share longline fisheries** that hold individual fishing quotas (IFQs) primarily target groundfish species, mainly sablefish. This fishery has 100 percent observer coverage; therefore, the observed bycatch is a complete census of these vessels. Since the 2015 EIS, 0-2 black-footed albatross have been caught and estimated for 2015-2018 (Table 9).

The report also provides mortality data for pot gear and trawl fisheries, which are generally lower than those listed above.

4.2.2 Effects of the Alternatives on Protected Resources

NMFS continues to monitor and report on impacts as described in the previous section and to ensure that the fishery minimizes impacts to protected resources and operates within the incidental take parameters for each applicable species. The Council will continue to explore, test, and implement, where appropriate, management measures that reduce impacts on protected resources. Although we are not proposing any new related measures in this biennial cycle, in recent years, we have adopted tools for mitigating impacts to salmon, including, in 2021, adaptive block area closures and selective flatfish trawl gear requirements (86 FR 10857). As noted above, we adopted recommendations for seabird bycatch mitigation in 2015 and 2019 (80 FR 71975, 84 FR 67674), requiring either streamer lines be deployed during setting operations on certain vessels or vessels only setting gear at night. Because trawl fisheries are 100 percent monitored through observers or electronic monitoring, any take of protected and prohibited species will be known quickly and accountability measures, including block area closures for the groundfish bottom trawl fishery, could be implemented to reduce interactions with protected species.

The effects of the Proposed Action on protected resources are difficult to assess and cannot be predicted quantitatively. In past NEPA documents, we have explained that fishery management actions may have impacts based on changes in the spatial distribution of fishing effort and the occurrence and abundance of protected resource populations. Management-induced changes in the distribution and intensity of groundfish fishing are unlikely to discernibly affect food web dynamics (see Section 4.4) or indirectly impact protected species.

Within this analytical context, we find that the HCRs proposed under Alternatives 1 and 2 and the proposed management measures are not anticipated to change interactions with protected resources

as compared to the No Action Alternative. Management-induced changes in the intensity and distribution of fishing effort are far outweighed by ecosystem and other external factors:

Ecosystem factors include ocean conditions and trophic relations. The most recent California Current Ecosystem Status Report (Agenda Item H.1.a, CCIEA Team Report 1, March 2024) summarizes climate and ocean drivers, indicators related to the abundance and condition of key species and the dynamics of ecological interactions, protected resources, a habitat compression index as a way of understanding food web dynamics, species distribution, and conditions that can lead to whale entanglement. However, despite this information and analysis, as previously emphasized, we cannot predict how these conditions will play out with respect to groundfish fishery and protected resources interactions during the 2027-28 biennium.

External factors include markets and fishermen's decisions as to where, when, and how to fish. This includes decisions on what gear to use and where to land or sell their fish. The risks to protected species differ across fishery sectors and gear types. For example, the midwater trawl fishery has a higher risk of salmon interactions, while the fixed gear fishery has a higher risk of whale entanglements. We do not directly regulate the behavior of fishery participants; we only set catch limits and catch controls for the fishery and sectors, which taken together indirectly affect such behavior.

Based on the NOAA NEPA Companion Manual (2025), we determine significance under NEPA by looking at the affected geographic area, the national, regional, and local contexts, and the degree of the reasonably foreseeable effects of the proposed action on protected species. In considering the degree of effects on protected species, we evaluated both anticipated short- and long-term effects, and beneficial and adverse effects. For this impact analysis, we interpret the context for this action as the affected environment, which is the groundfish fishery across multiple sectors and in federal waters off three states. The degree of impacts on protected resources will also vary based on the ecosystem and external factors listed above, which are not a foreseeable consequence of the Proposed Action.

Potential impacts on protected resources from fisheries subject to the Proposed Action are constrained by discretionary and non-discretionary measures enumerated in the relevant ITSs, such as those for Chinook salmon and short-tailed albatross. Additionally, as described above, other statutory mandates, like the MMPA, may trigger the implementation of mitigation measures outside of the Proposed Action. Adaptive management, fishery monitoring, and periodic adjustment indirectly support the objectives of protected species mandates. Therefore, in the NEPA context, we expect this combination to avoid significant impacts to protected species.

4.3 Essential Fish Habitat

4.3.1 Status/Affected Environment

We tier this section from the 2015 EIS Section 3.3 and 4.11. Essential fish habitat (EFH), protected by the MSA (§3(10), §303(a)(7)), includes the waters and substrate necessary to support a fish population necessary to maintain both a sustainable fishery and a healthy ecosystem. We have defined waters to include aquatic areas and their associated physical, chemical, and biological properties that fish use. Substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities (50 CFR 600.10).

The Groundfish FMP (Chapter 7), as amended by Amendment 19 (2006) and Amendment 28 (2019), defines groundfish EFH and identifies Habitat Areas of Particular Concern. The Final EIS for Amendment 28 (PFMC and NMFS 2019) describes the relative impact of trawl and fixed gear on habitat types. This impact depends on a variety of factors and is difficult to predict. The factors include substrate type, features (e.g., seamounts and canyons), key benthic organisms (e.g., canopy kelp and seagrass), benthic macro invertebrates (e.g., corals and sponges), gear type and configuration, frequency and duration of bottom contact, and the frequency of fishing in a particular area.

We use management measures to mitigate the adverse impacts of fishing on groundfish EFH, as mandated by the MSA (§Sec. 303(a)(7)) and elaborated in regulatory guidance (50 CFR 600 Subpart J). Groundfish FMP Chapter 6 describes related measures: gear restrictions (Section 6.6), time/area closures (Section 6.8), and measures to control fishing capacity (Section 6.9). For example:

- We implemented prohibitions on the dredge and beam trawl gear. We also prohibited bottom trawl gear with footropes larger than eight inches in diameter shoreward of a line approximating the 100 fm depth contour to protect habitat (Section 6.6.1).
- We established EFH Conservation Areas to protect habitats, especially those that are important, rare, or vulnerable, from the adverse effects of bottom-contacting fishing gears (Section 6.8.6).

We are required to periodically review EFH provisions based on BSIA (Groundfish FMP Section 7.6). In doing so, we continue to adjust the management measures in response to changing circumstances or new information. Measures implemented pursuant to Amendment 28 resulted in a net increase in habitat closed to bottom trawl activities. We added dozens of new and revised EFH Conservation Areas, including the large closure of the Southern California Bight, which closed most Federal waters in the area, except some areas closest to state waters, where non-groundfish bottom trawling occurs. We also closed waters deeper than 3,500 m to bottom contact gear. We will continue to refine the definition of EFH as needed; for example, under Amendment 28, we determined that methane seeps should be identified as EFH for groundfish. We also created additional EFH Conservation Areas for bottom contact gears under Amendment 32. We will continue these efforts outside of the Proposed Action.

4.3.2 Effects of the Alternatives on EFH

None of the Alternatives would result in a significant impact on EFH beyond those previously disclosed in prior analyses because they will not change the definition and designation groundfish EFH,

- Authorize any new gear that may impact bottom substrate, or
- Change the extent or efficacy of EFH Conservation Areas.

While we cannot predict fishing behavior, we do not expect any of the Alternatives to substantially change the intensity or location of fishing-gear related impacts to EFH.

4.4 California Current Ecosystem

4.4.1 Status/Affected Environment

We tier this section from the 2015 EIS Sections 3.4 and 4.12, as updated by Section 3.2 of the 2021-2022 EA and Section 4.4.1 of the 2025-2026 EA. The Pacific Coast Fishery Ecosystem Plan (FEP) discusses the impacts that fisheries and other human activities have on ecosystem dynamics and marine habitat within the California Current Ecosystem (CCE). Section 3.4 of the 2015 EIS characterizes the ecosystem as a web of trophic relationships within the system and indicates how the harvest specifications and management measures impact the relative abundance of organisms within this web.

Because the flow of energy is more of a food web than a food chain, the species in the ecosystem are not neatly divided into clearly delineated trophic levels (for example, an organism may eat a prey item and also eat items that its prey eats), except at the highest and lowest levels. Groundfish, therefore, may occupy multiple trophic levels when considering changes that occur over the course of their life, as they change both their size and feeding preferences. (See Figure 3.2.1 in the 2015 EIS for an example of the complexity of the food web). Groundfish are also the prey of several species (2015 EIS Section 3.4.2), including marine mammals, seabirds, and high trophic level fish such as Chinook salmon and large demersal sharks.

The FEP discusses the three major factors that drive changes in the abundance and distribution of fished species oceanic systems: removals by fishing (and consequent changes in community structure and energy flow/predation within ecosystems), removals or habitat loss unrelated to fishing (typically such impacts are greater in freshwater, estuarine, and nearshore systems), and shifts in climate that lead to both direct and indirect changes in productivity (including indirect effects such as changes in the abundance of prey or predators). Any and all of these effects can have cascading and cumulative impacts on oceanic conditions, such as trophic energy flow that could lead to unexpected changes or surprises with respect to marine resource and fisheries management activities.

Both the 2015 EIS (Section 3.4.5) and the FEP (Section 4.1) detail the effects of shifting oceanic conditions. Shifting oceanic conditions are expected to lead to substantial changes in future physical characteristics and dynamics within the marine environment, with complex and interacting impacts on marine populations, fisheries, and other ecosystem services (Doney*, et al.* 2014; Harley*, et al.* 2006; Scavia*, et al.* 2002). Three major aspects of future environmental change that will have direct effects on the CCE are ocean temperature, pH (acidity versus alkalinity) of ocean surface waters, and deepwater oxygen (2015 EIS).

4.4.2 Effects of the Alternatives on the CCE

Section 3.4.3 of the 2015 EIS, which we incorporate by reference, presents the fishery's anticipated impacts on the CCE. For example, the reduction of a predator population may allow a prey population to increase. Density-dependent interactions such as competition for habitat may decrease as the population of one or both interacting species declines. The analysis was based on simulation modeling of fleets, catch, ecosystem components, and ecosystem health, and demonstrated the complexities of these effects. For example, the analysis showed that:

- Bottom trawl fishing indirectly affected small shallow rockfish and zooplankton (krill), with their populations increasing due to the reduction in predation;
- Fixed gear fishing indirectly affected mesozooplankton (copepods), with their populations increasing due to removal of their predators; and
- Pacific whiting trawl fishing indirectly resulted in increases of small planktivores, large piscivorous flatfish, Dover sole, shortbelly rockfish, and shrimp, due to reduced predation by Pacific whiting.

The 2015 EIS analysis explored the effect on oceanic conditions of successively adding fleets and found that forage fish mortality increases with each fleet addition. However, we take proactive measures to protect marine resources when possible. For example, in 2016, we published an EA for comprehensive ecosystem-based management to protect unfished and unmanaged forage fish species. We amended all of the Council's FMPs to "bring Shared [ecosystem component] Species into the FMPs as EC species and to prohibit new directed commercial fishing in federal waters on them until the Council has had adequate opportunity to both assess the scientific information relating to any proposed directed fishery and consider potential impacts to existing fisheries, fishing communities, and the greater marine ecosystem" (81 FR 19054).

None of the Alternatives would result in a significant impact on the CCE beyond those disclosed in prior analyses because the Proposed Action is part of the adaptive management system that continuously optimizes fishery and ecosystem protections through stock and stock complex management, rebuilding plans, harvest specifications, and management measures.

El Niño and Changing Oceanic Conditions

The El Niño Southern Oscillation (ENSO) is the best source of predictability for marine ecosystem conditions in the CCE. ENSO conditions tend to increase temperatures in the CCE and lower productivity; whereas, La Niña conditions tend to produce the opposite. NOAA Climate Prediction Center modeling indicates that ENSO-neutral will emerge during January-March 2026, though La Niña may still have some influence through the early spring (NOAA, 2026).

The annual ecosystem status reports to the Council, regular stock assessments, and groundfish SAFE documents identify likely or plausible groundfish responses to a constantly evolving context that includes climate change. For example, the growth of splitnose rockfish was found to correlate with climate and environmental variables, oxygen thresholds throughout the slope waters that impact the vertical distribution of populations and the species composition of ecosystems, and climate change-driven distributional shift and/or the effect of large recruitments of shortbelly rockfish (PFMC, 2025c).

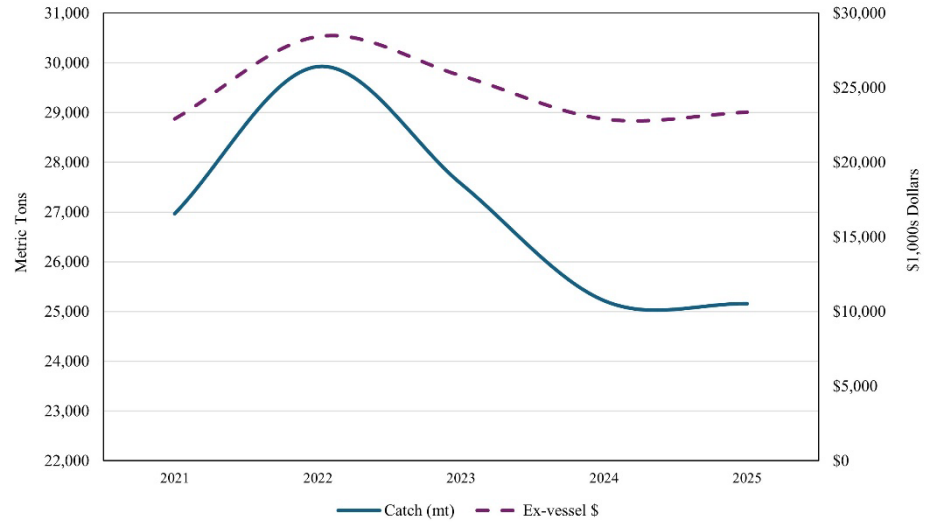
With this information, we adjust our HCRs and management measures to optimize the fishery while protecting stocks and stock complexes in response to BSIA. The biennial process allows us to consistently ensure that our fishery management decisions are adaptively managing for possible climate change impacts. While we do not know the cause of the current status of overfished species, the continuation of harvest specifications based on rebuilding plans are examples of this adaptive management process. We do not anticipate any synthesis ecosystem impacts in addition to the individual effects described above.

4.5 Socioeconomics

4.5.1 Status/Affected Environment

We tier this section from the 2015 EIS Sections 3.2 (Affected Environment) and 4.10 (Long-term impacts), as updated by the 2023-24 EA Section 4.2 (Effects of the Proposed Action on the Socioeconomic Environment). Section 1 in the Socioeconomic Analysis for the 2027-28 Harvest Specifications and Management Measures (hereafter Socioeconomic Analysis) provides the most recent description of the landings and revenue in the commercial, tribal, and recreational groundfish fisheries.

As noted throughout this document, landings in the groundfish fishery are often substantially below the ACL for nearly all species. Landings and revenue are driven in large part due to market conditions, which may make it difficult to connect trends in landings and revenue specifically to a particular management measure. Total landings, in metric tons, and ex-vessel revenue, in $1,000s of dollars, from 2021 to 2025 are shown for the individual fishing quota trawl (IFQ) fishery (Figure 10), the shoreside and at-sea whiting fisheries (Figure 11), and the commercial non-trawl limited entry (LEFG) and open access (OA) fixed gear fisheries (Figure 12). The data indicates that in the IFQ trawl fishery, the ex-vessel revenue has remained somewhat steady over the five-year period even as total landings have declined. This is likely a result of stocks as petrale sole and sablefish being a source of high ex-vessel revenues. The catch and ex-vessel revenues for whiting fishery, both shoreside and at-seas (mothership and catcher processors) have a close association (Figure 11). In the fixed gear fishery, the LEFG and OA sectors show differences. The OA sector has had fairly consistent landings and revenues over the time period; whereas, the LEFG sector shows a similar pattern until 2025, where the landings and revenues increase to almost double of prior years. This increase may be a result of the large increase of sablfish ACLs for 2025 and 2026 as compared to years prior.



\

Figure 9. IFQ trawl fishery landed total groundfish weight and inflation adjusted ex-vessel revenue in thousands of dollars ($) for 2021-25 (PFMC, 2026c)

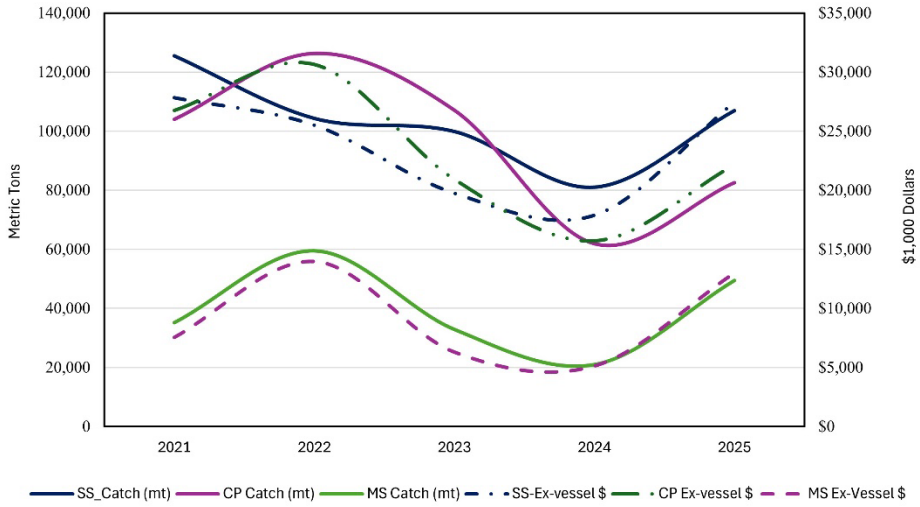


Figure 10. Shoreside and At-sea whiting fishery landed total Pacific whiting (hake)weight and inflation adjusted ex-vessel revenue in thousands of dollars ($) for 2021-25 (PFMC, 2025c)

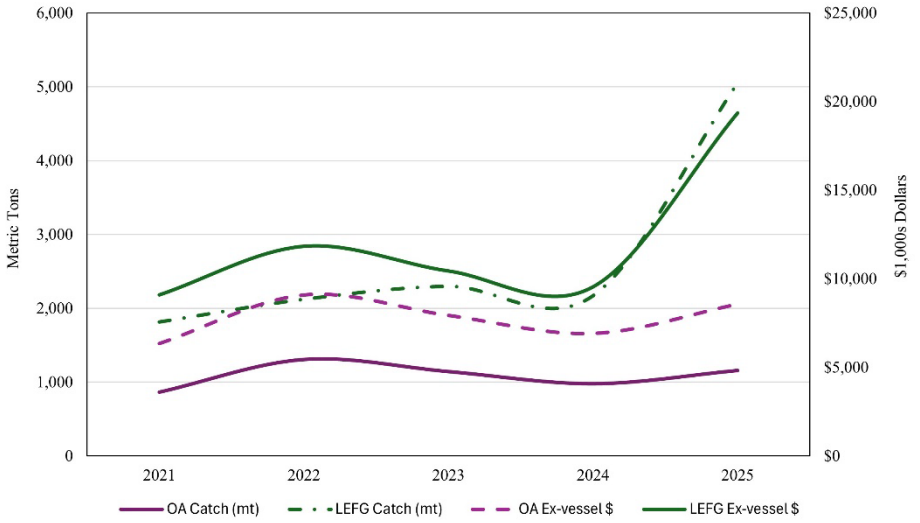


Figure 11. Limited entry (LE) and open access (OA) commercial non-trawl landed weight and inflation adjusted ex-vessel revenue in thousands of dollars ($) for 2021-25. (PFMC, 2026c)

Recreational fisheries in the EEZ are managed with Federal limits and management measures decided in the Council process. Recreational fisheries primarily target groundfish using hook-and-line gear, although groundfish are also occasionally targeted by divers using spears. Recreational fisheries extend from shore-based modes (fishing off the beach or man-made structures, such as wharves and jetties) to boat-based modes, including private boats and charter/commercial passenger fishing vessels (CPFVs). This action only pertains to recreational fishing in the EEZ; therefore, all recreational fishing activity is conducted from vessels. Each State manages their respective recreational fisheries to Federally-specified State HGs for select stocks. Total recreational catch (landings plus estimated discard mortalities) counts against the non-trawl allocation (see Section 2.3.1.1).

The largest proportion of recreational angler fishing effort occurs in California, and particularly Southern California. As shown in Figure 13, on average, California accounted for 79 percent of coastwide groundfish boat trips (private and charter), 2021-2025. Effort across all states was relatively stable for the 5-year period (Figure 13).

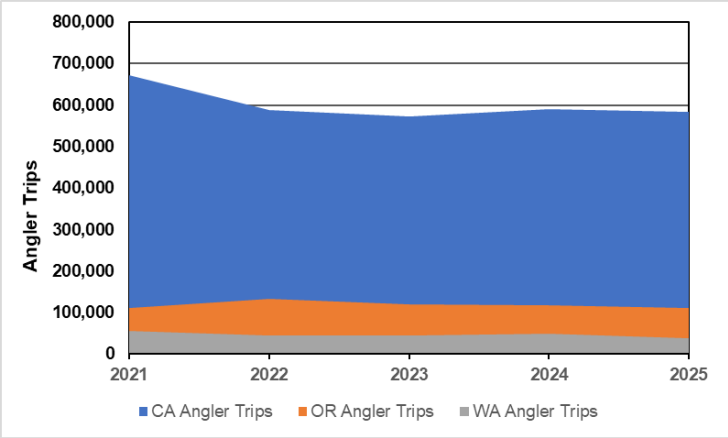


Figure 12. Total bottomfish plus Pacific halibut marine angler boat trips (private and charter) by state, 2021 to 2025. (Source: RecFIN, January 29, 2026)

Table 6 shows that the ex-vessel revenue derived from stocks considered under alternative HCRs for major west coast ports is generally less than 10 percent. Notable stocks where ex-vessel revenue is a significant proportion of total groundfish ex-vessel revenue are chilipepper in Bodega Bay, CA (27 percent), widow rockfish in Astoria, OR (21 percent) and Newport, OR (22 percent), shortspine thornyhead in Santa Barbara, CA (37 percent), and petrale sole in in Columbia River ports (26 percent) and Newport, OR (22 percent).

Table 6. A 5-year examination (2021-25) examination of the proportion of ex-vessel revenue for stocks where alternative harvest control rules are considered to total managed groundfish ex-vessel revenue for major west coast ports. Stocks where greater than 20 percent of ex-vessel revenue is derived from stocks with alternative harvest control rules shaded. Data excludes Pacific whiting. A * indicates where the percentage is less than 0.05 percent. CnR =canary rockfish, CpR = chilipepper, RbR =rougheye black spotted rockfish, WdR =widow rockfish, YtL N = yellowtail rockfish north of 40°10′ N. lat., YeR = yelloweye rockfish, StH =shortspine thornyhead, and PtS = petrale sole. (PacFIN Apex, GMT Rpt 005, accessed 2/10/2026)

Port	CnR	CpR	RbR	WdR	YtL N	YeR	StH	PtS
North Puget Sound, WA	0.1%	0.0%	0.1%	0.0%*	0.3%	0.1%	0.3%	8.3%
Coastal WA	0.8%	0.0%	0.4%	0.0%	23.3%	0.0%*	0.6%	2.8%
Columbia River WA	0.2%	0.0%	0.5%	0.0%	0.8%	0.0%	0.2%	10.3%
Astoria, OR	0.9%	0.0%*	0.1%	20.6%	7.6%	0.0%*	0.8%	26.0%
Tillamook, OR	0.8%	0.0%	0.0%	0.0%	1.1%	0.0%	0.0%	0.0%
Newport, OR	0.8%	0.0%	0.1%	22.0%	0.7%	0.0%*	0.8%	13.2%
Coos Bay, OR	0.4%	0.1%	0.0%*	0.2%	0.5%	0.0%	0.6%	10.7%
Brookings, OR	0.3%	0.0%	0.1%	0.0%*	0.1%	0.0%	0.4%	2.6%
Crescent City	0.8%	0.0%	0.0%	0.3%	1.3%	0.0%	0.0%	0.0%
Eureka, CA	4.7%	1.5%	0.1%	13.2%	3.3%	0.0%	1.2%	7.0%

Port	CnR	CpR	RbR	WdR	YtL N	YeR	StH	PtS
Fort Bragg, CA	2.3%	14.4%	0.0%*	0.3%	0.5%	0.0%*	1.7%	22.3%
Bodega Bay, CA	0.4%	26.8%	0%*	1.1%	N/A	0.0%	0.0%	0.0%
San Francisco, CA	1.1%	7.0%	0.0%*	0.3%	N/A	0.0%	0.2%	13.6%
Monterey, CA	0.6%	12.5%	0.0%*	0.1%	N/A	0.0%	11.2%	0.5%
Morro Bay, CA	0.8%	0.6%	0.0%*	0.0%*	N/A	0.0%	13.6%	0%*
Santa Barbara, CA	0.8%	0.3%	0.0%	0.0%*	N/A	0.0%	36.5%	0%*
Los Angeles, CA	0.0%	0.4%	0.0%	0.9%	N/A	0.0%	13.4%	0.0%
San Diego, CA	0.0%*	1.6%	0.0%	0.1%	N/A	0.0%	8.8%	0.0%

4.5.2 Effects of the Alternatives on Socioeconomics

This section will be completed after April 2026.

5. Reasonably Foreseeable Environmental Effects

5.1 Analysis Approach

This section adheres to the 2025 NOAA NEPA Companion Manual for considering reasonably foreseeable environmental effects. Effects or impacts are considered "reasonably foreseeable" if they are sufficiently likely to occur such that a person of ordinary prudence would take them into account when making a decision. When identifying these foreseeable impacts, decision-makers evaluate changes to the "human environment," which includes:

- **Ecological:** Impacts on natural resources, ecosystems, and their functioning.
- **Socio-Economic:** Effects on employment, local economies, and social structures.
- **Cultural & Historic:** Changes to historic sites, cultural resources, or Tribal sacred areas.
- **Public Health:** Potential impacts on the safety and health of the community.
- **Aesthetic:** Changes to the visual or physical character of the environment.

NMFS is **not** responsible for analyzing effects that:

- The agency has **no ability to prevent** due to the limits of its regulatory authority.
- Would occur **regardless** of whether the proposed action is taken.
- Would need to be **initiated by a third party**.

5.2 Reasonably Foreseeable Environmental Effects

Reasonably foreseeable environmental effects are generally limited to the 2027-28 period, because we will evaluate the effects of proposed actions for each future biennium as they are developed through Council decision making. As part of our adaptive management system, we are continuously considering and analyzing potential improvements to the fishery. Section 4.15.4 of the 2015 EIS describes the broad range of fishery management and non-fishery management actions that we consider. The most recent Groundfish Workload Planning report lists possible upcoming actions. As appropriate, NEPA analyses associated with each of these actions will take into account the effects of harvest specifications and management measures for the 2027-28 biennium.

5.2.1 Ecological

Managed Fish

As we discussed in Section 4.1, ACLs for managed fish are set to optimize the fishery, while ensuring that fishing levels do not exceed a rate (overfishing) or level of fishing mortality (overfished) that jeopardizes the capacity of a fishery to produce the MSY on a continuing basis. Additionally, NMFS adaptively manages all stocks and stock complexes within a system that periodically assesses stocks, monitors catch, adjusts management measures (catch controls) to keep projected catch within the catch limits, and adjusts management measures to maximize attainment within the catch limits. This adaptive management system does not operate within a vacuum. It accounts for all other effects on the managed fish stocks and stock complexes,

including, but not limited to, changing environmental conditions, bycatch in other fisheries, effects on groundfish EFH, and other sources of mortality. Therefore, there are no reasonably foreseeable environmental effects that, when combined with the effects of the Proposed Action, would cause significant impact on managed fish.

Protected Resources

As described in Section 4.2, several species (e.g., certain humpback whale DPS and some stocks of Pacific salmon) that interact with the groundfish fisheries are listed under the ESA or protected under the MMPA or the MBTA. Given the ITS constraints, constant monitoring, and other mitigation measures discussed in Section 4.2, there are no reasonably foreseeable environmental effects that, when combined with the effects of the Proposed Action, would cause significant impact on protected species.

Essential Fish Habitat

Section 4.15.4.3 of the 2015 EIS summarizes past, present, and reasonably foreseeable future actions that may impact groundfish EFH. The 2020-2021 EA (Sections 5.2.2 and 5.4.1) summarized the impact of the Pacific Coast Groundfish Trawl Changes and Amendment 28. Those impacts, both beneficial and adverse, are expected to continue into the future regardless of the Proposed Action. Therefore, there are no reasonably foreseeable environmental effects that, when combined with the effects of the Proposed Action, would cause significant impact on EFH.

Ecosystem

There are no reasonably foreseeable environmental effects that, when combined with the effects of the Proposed Action, would be expected to cause significant impact on the ecosystem.

5.2.2 Socioeconomics

As we discussed in Section 4.1, and above for Managed Fish, we adaptively manage all stocks and stock complexes within a system that, among other things, adjusts management measures to maximize attainment within the catch limits. This adaptive management system does not operate within a vacuum; it accounts for other effects on the socioeconomic environment, including market interruptions and stability, available harvest and mortality of target and non-target stocks, dynamics with and status of other fisheries (such as salmon, etc.), and other social and economic factors. Therefore, there are no reasonably foreseeable environmental effects that, when combined with the effects of the Proposed Action, would cause significant impact to socioeconomics.

5.1.1 Cultural and Historic

There are no reasonably foreseeable environmental effects that, when combined with the effects of the Proposed Action, would cause significant impacts to cultural or historic resources.

5.1.2 Public Health

There are no reasonably foreseeable environmental effects that, when combined with the effects of Proposed Action, would cause significant impacts to public health.

5.1.3 Aesthetic

There are no reasonably foreseeable environmental effects that, when combined with the effects of the Proposed Action, would cause significant impacts to aesthetic resources.

6. Magnuson-Stevens Act and FMP Considerations

6.1 Substantive Authority for Action

This action is consistent with the authority provided in the Magnuson Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act [hereafter 'MSA"]) and the 10 National Standards contained in the MSA.

6.2 Magnuson-Stevens Act National Standards

This document includes an analysis of the 2027-28 Pacific coast groundfish harvest specifications and management measures action alternatives considered by the Council in relation to the 10 National Standards as contained in the MSA, and a brief discussion of how each alternative is consistent with the National Standards, where applicable. In recommending a preferred alternative, the Council must consider how to balance the National 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.

MSA section 303(a)(3) requires that each Fishery Management Plan (FMP) include an estimate of maximum sustainable yield (MSY) and optimum yield (OY) for the fishery. OY is the quantity of fish that will provide the greatest overall benefit to the U.S., particularly with respect to food production and recreational opportunities, taking into account the protection of marine ecosystems. OY is prescribed as the MSY from the fishery as reduced by any relevant economic, social, or ecological factors; and in the case of an overfished fishery, provides for rebuilding to a level consistent with producing the MSY in such fishery on a continuing basis. The Proposed Action recommended by the Council (i.e., Alternative 1 for most stocks and Alternative 2 for some stocks) is consistent with the OY harvest management framework described in Chapter 4 of the Pacific Coast Groundfish Fishery Management Plan (Groundfish FMP). Chapter 4 of the Groundfish FMP describes OY as "a decisional mechanism for resolving the MSA's multiple purposes and policies, implementing an FMP's objectives and balancing the various interests that comprise the national welfare." The OYs are based on MSY or MSY as reduced in consideration of social, economic, or ecological factors.

The harvest control rules (HCRs) proposed in the Council's proposed action for the 2027-28 management cycle balance the stock conservation mandate in the MSA and the socioeconomic mandate in National Standard 1 to provide the greatest overall benefit to the U.S., with respect to achieving OY while managing fishery resources consistent with the National Standard 1 Guidelines. The Council selected as their current PPA, default HCRs for all stocks and stock complexes except for canary, chilipepper, rougheye/blackspotted, widow, yelloweye, and yellowtail (north of 40°10′ N. lat.) rockfishes; shortspine thornyhead, and petrale sole.

For canary rockfish, the Council's PPA is Alternative 2. This HCR allows for slightly higher harvest relative to the default HCR Alternative 1. The ACL under Alternative 2 is approximately six percent higher than under Alternative 1. Both Alternatives are predicted to increase biomass over the 10-year projection period as the trajectory is similar for the spawning output and depletion.

The projection shows biomass decreasing until 2031 and then increasing after. The stock remains in the precautionary zone over the 10-year projection period. Although Alternative 2 permits slightly higher amount of harvest in 2027 and 2028, neither of the Alternatives are likely to result in overfishing and the projected difference in unfished biomass between the two Alternatives at year 10 is approximately eight metric tons, with the ACL under Alternative 1 projected to be three mt higher than under Alternative 2. The less precautionary HCR under the PPA (Alternative 2) may offer slight relief and some flexibility to industry; by reducing the constraints near term ACLs induce on the fishery. Accordingly, Alternative 2 is consistent with National Standard 1.

For chilipepper, the Council's PPA is Alternative 2. The 2025 assessment (Dick et al, 2025) estimated the stock to be at 76.6 percent of unfished biomass. Alternatives 1 and 2 are estimated to decrease biomass, but the stock remains well above $B_{40\%}$ throughout the projection period. The trajectory is similar for the spawning output and depletion. Under Alternative 2, the stock stays at a higher stock status over the time series due to the expected lower harvest in 2027 and 2028. Regardless, both Alternatives stay above the $B_{40\%}$ management target and the choice between Alternatives will not impact the overall stock status in the projection period. The PPA is a more precautionary approach to annual estimated depletion than Alternative 1 and is reflective of catch trends in the fishery at present. Neither Alternative is likely to constrain fisheries or result in the stock becoming overfished. Because Alternative 2 results in ACLs that are more reflective of the current fishery than Alternative 1, there is no operational advantage expected from the increased ACLs that would occur under Alternative 1. Therefore, a precautionary approach does not limit the fishery for this stock and is consistent with National Standard 1. Additionally, at the end of the projection period, the Alternative 1 ACL would be 50 mt lower than under Alternative 2, indicating Alternative 2 is projected to provide higher long-term yield.

For rougheye/blackspotted rockfish, the 2025 assessment (Cope et al, 2025) estimated the stock to be well above the $B_{40\%}$ management target, at 88 percent of unfished biomass. The Council adopted Alternative 2 as PPA. Under both Alternatives 1 and 2, the trajectory is similar for the spawning output and depletion and biomass declines but remains above $B_{40\%}$ over the 10-year projection period. Alternative 2, with the lower amount of harvest in 2027 and 2028, does result in higher spawning output and depletion as compared to Alternative 1 over the time series. However, the choice between Alternatives will not impact the overall stock status in the projection period because both Alternatives maintain the stock well above $B_{40\%}$ throughout the projection period, thus the stock is not likely to become overfished regardless of the Alternative adopted. Alternative 2 is a more precautionary approach to the uncertainty surrounding biomass estimates from the assessment, and neither Alternative is likely to constrain catch within the fishery; thus, Alternative 2 is consistent with National Standard 1. Additionally, at the end of the projection period, the Alternative 2 ACL is estimated to be 16 mt higher than under Alternative 1, indicating Alternative 2 is projected to provide higher long-term yield.

For widow rockfish, the National Standard Guidelines consistency analysis will be completed after April 2026.

For yellowtail rockfish north of 40°10′ N. lat., the Council adopted Alternative 2 as their PPA. The assessment (Oken et al, 2025) estimated unfished biomass at 58 percent at the beginning of the projection period. For both Alternatives 1 and 2, the spawning output and depletion trajectories are similar. Stock status decreases until 2031, but begins to gradually increase after that year, with

the stock remaining above $B_{40\%}$ throughout the projection period. Under Alternative 2, the stock is at a lower stock status for the majority of the time series due to the projected higher harvest in 2027 and 2028; however, overall stock status stays in a similar state as Alternative 1. Neither of the Alternatives are likely to result in overfishing and the projected difference in unfished biomass between the two Alternatives at year ten is approximately nine metric tons. Therefore, the choice between Alternatives would not impact the overall stock status in the projection period. A key difference between the Alternatives is the Alternative 2 HCR is set one metric ton lower than the OFL for 2027. This minimal buffer could raise concerns that the OFL could be exceeded; however, overfishing is not expected as the Council closely monitors catch of managed species and can take inseason action at any one of five annual meetings to confirm that the fishery is structured to achieve, but no exceed, ACLs. Alternative 2 is therefore consistent with National Standard 1, as increased ACLs under Alternative 2 may slightly reduce constraints on the fishery relative to Alternative 1 and support the fishery in achieving OY.

For yelloweye rockfish, the 2025 update assessment (Johnston et al, 2025) indicates the stock is rebuilt as of 2026, at 40.1 percent of unfished biomass. The stock's unfished biomass is further projected to increase over the next 10 years. Alternative 2 was adopted by the Council as PPA. For both Alternatives 1 and 2, the biomass is projected to increase for spawning output and fraction unfished over the projection period, with similar trajectories. Both Alternatives maintain the stock well above $B_{40\%}$ throughout the projection period, thus the stock is not likely to become overfished regardless of the Alternative adopted and the choice between Alternatives does not impact stock status over the projection period. Under Alternative 2, the stock does end up at a higher stock status in 2027 and 2028 due to lower harvest limits. While the difference of the Alternatives in terms of impacts to biomass may be minimal Alternative 2 is a more precautionary approach and would be appropriate for a stock that recently moved from overfished to above the management target. Additionally, at the end of the projection period, the ACLs under the Alternatives differ by one mt, with Alternative 2 being the higher of the two.

For shortspine thornyhead the Council adopted Alternative 2 as their PPA. The ACLs under Alternative 2 are 50 mt and 46 mt higher in 2027 and 2028, respectively, than under Alternative 1. Under both Alternatives 1 and 2, the spawning output and depletion trajectories are similar over the 10-year projection period, even though Alternative 2 permits a higher amount of harvest in 2027 and 2028. Neither of the Alternatives are likely to result in overfishing and the projected difference in unfished biomass between the two Alternatives at year 10 is approximately one metric ton. Accordingly, by the end of the projection period, Alternative 1 results in a 0.1 percent higher estimated unfished biomass than under Alternative 2. In both cases, the stock reaches $B_{40\%}$ at the end of the projection period. The choice between Alternatives does not therefore impact the overall stock status in the projection period, even though there is a slightly larger buffer between the ABC/ACL and OFL under Alternative 1, which could theoretically decrease the risk of overfishing. Alternative 2 is therefore consistent with National Standard 1 because the increased ACLs would reduce constraints on the fishery relative to Alternative 1, and thus support the fishery in achieving OY.

For petrale sole, the Council adopted Alternative 2 as their PPA. The ACLs under Alternative 2 are 40 mt and 66 mt higher in 2027 and 2028, respectively, than under Alternative 1. Under both Alternatives, the spawning output and depletion trajectory are similar and the stock remains above $B_{25\%}$ over the 10-year projection period. The stock biomass is projected to decrease initially and,

after 2028, begins to increase under the Alternatives. However, Alternative 2, with the higher amount of harvest in 2027 and 2028, does remain below the Alternative 1 anticipated depletion until 2034. Neither of the Alternatives are likely to result in overfishing and the projected difference in unfished biomass between the two Alternatives at year 10 is approximately three metric tons. Because the choice between Alternatives will not impact the overall stock status in the projection period, and increased ACLs under Alternative 2 may slightly reduce constraints on the fishery relative to Alternative 1, and thus support the fishery in achieving OY, Alternative 2 is consistent with National Standard 1.

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

The best scientific information available (BSIA) standard applies to the following areas relative to this proposed action: stock assessments, rebuilding analyses, and methods for determining management reference points (overfishing limit [OFL], acceptable biological catch [ABC], annual catch limit [ACL], etc.). These areas form the basis for determining harvest levels and the evaluation of socioeconomic impacts. All decisions made as part of the 2027-28 process were consistent with the Regional BSIA Framework Policy and developed in response to NMFS's Policy Directive 01-101-10. Harvest specifications for 2027 and 2028 were updated and based on default or alternative HCRs analyzed in this document. As evidenced by the analyses and comments provided by the Council's numerous advisory panels, including the Scientific and Statistical Committee (SSC), and the committee reports submitted in preparation for and at Council meetings, these values reflect the application of the BSIA to current harvest management policies.

The harvest specifications considered under the action (the Alternatives, including the Final Preferred Alternatives) are based on the most recent stock assessments, rebuilding analyses, and other scientific products, such as catch-only updates. All of these were developed through the peer review stock assessment review (STAR) or other similar process, and all of these assessments were determined to be BSIA by the SSC and NMFS, before the results were used to decide harvest specifications and management measures for 2027-28.

The Groundfish SAFE document will be updated to summarize the basis for the alternative harvest specifications considered by the Council and will reference the stock assessments, rebuilding analyses, and other scientific information that was used to develop the 2027-28 harvest specifications and management measures. The Groundfish SAFE (PFMC, 2025c) document also describes the methods that were used to determine reference points for harvest specifications (OFL, ABC, ACL, etc.) for the Pacific Coast groundfish stocks and stock complexes.

The process to determine stock assessment priorities for Pacific Coast groundfish utilizes a matrix of factors designed by NMFS's NWFSC, following national NMFS guidance on best practices for making such decisions. This process has been judged by NMFS to be BSIA.

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 Council develops and designates management units for groundfish, which include stocks, stock complexes, or geographic subdivisions thereof within its jurisdiction in the West Coast EEZ. Groundfish ACLs are set for these management units. The Groundfish SAFE (PFMC, 2025c) details the process by which ACLs for each management unit are developed. Some West Coast groundfish stocks have a broader distribution than the West Coast EEZ and are therefore managed by multiple countries and management entities. For example, Pacific whiting is managed under an international treaty agreement with Canada and the harvest specifications for this stock are developed outside of this action.

The Council is in the final steps of the process to identify stocks in need of conservation and management in the EEZ. Stocks of managed species were defined under Amendments 31, 35 and 37. Under Amendment 37, 49 stocks for 50 species were designated to be in need of conservation and management in the EEZ via the 10 Factor Analysis at 600.305(c). The stocks considered under alternative HCRs are within the group of 49 stocks designated as in need of conservation and management in the EEZ. As part of its process to define managed stocks, the Council is considering whether stocks of eight remaining species listed in the Groundfish FMP are in need of conservation and management in the EEZ, with a decision expected by summer of 2026.

While the Groundfish FMP currently lists 86 species as managed by the Council, it is expected that a future amendment to the FMP will reduce this number to, at minimum, 50 species per the findings of Amendment 37. Thus, the species noted in this analysis are likely to be revised during the 2027-28 biennium, though the timeline for such revision is uncertain. Therefore, this document treats all species currently listed in the Groundfish FMP, at their fishery management unit delineation, as in need of conservation and management in the EEZ regardless of whether stocks for that species have been identified as in need of conservation and management in the EEZ or defined.

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.

Fishery sector allocations are intended to provide improved utilization of target stocks by reducing the stranding of available yield in a sector's allocation, and thus to address potential inequities. Allocation decisions are made through the Council process, which facilitates substantial participation by state representatives and the public. Allocation proposals are brought forward when alternatives are crafted through cooperative efforts between fishery managers and the public, taking into account the needs of fishing communities and the biological aspects of a given stock. Emphasis is placed on equitable division, while simultaneously considering and achieving conservation goals.

In the trawl sector, fishery participants who belong to the individual fishing quota (IFQ) sector will generally receive the same percentage of a sector allocation biennium to biennium. The non-trawl sector operates under trip limits and no single entity is granted a percentage; therefore, the distribution of the allocation is under a common pool and all participants have equal opportunity

to harvest the allocation. There are no formal groundfish allocations to the recreational fisheries as they share the non-trawl allocation.

During this biennial harvest specifications process, the Council is considering modifications to the biennial trawl/non-trawl allocations for widow rockfish and the slope rockfish complex south of 40°01′ N. lat. The Council is considering reducing the non-trawl allocation of the widow rockfish biennial allocation by 150 mt to better reflect the needs of the trawl sector based on the results of the update assessment (2025). This change is being evaluated as the trawl allocation could be reduced by as much as 50 percent, which would be likely to constrain the trawl sector. Since the 2020-21 biennium, the non-trawl sector attainment has averaged seven percent attainment of the total ACL, whereas, on average, the trawl sector has attained nearly 90-95 percent of their past allocations.

The Council is considering modifications to the slope rockfish complex south of 40°01′ N. lat. allocations in an effort to improve the efficiency and effectiveness of the allocation. The Council is contemplating whether implementing a simpler methodology to establish the allocation would better reflect the needs of the fishery and reduce complexity.

This action considered alternative HCRs for canary, chilipepper, rougheye/blackspotted, yelloweye, and yellowtail (north of 40°10′ N. lat.) rockfishes; shortspine thornyhead, and petrale sole in the EEZ off the U.S. West Coast. Under the PPA for harvest specifications, the Council adopted Alternative 2 HCRs for these stocks. Canary, chilipepper (south of 40°10′ N. lat.), widow, yelloweye, and yellowtail (north of 40°10′ N. lat.) rockfishes, shortspine thornyhead, and petrale sole are managed as single stocks. Rougheye/blackspotted rockfish and chilipepper (north of 40°10′ N. lat.) are managed in the slope rockfish complex north and south of 40°10′ N. lat. and shelf rockfish complex north of 40°10′ N. lat. Canary, widow, yelloweye, and yellowtail (north of 40°10′ N. lat.) rockfishes, shortspine thornyhead, and petrale sole allocations are biennial allocations. Chilipepper (south of 40°10′ N. lat.) and yellowtail (north of 40°10′ N. lat.) rockfishes, and the slope rockfish complex north of 40°10′ N. lat., are allocated under the method described in Amendment 21.

Under Alternative 1, allocations for canary, chilipepper, rougheye/blackspotted, and yelloweye rockfishes increase relative to No Action; whereas, allocations for yellowtail (north of 40°10′ N. lat.) rockfish, shortspine thornyhead, and petrale sole decrease relative to No Action. These changes are due to the changes in ACLs.

Under Alternative 2, allocations for canary, chilipepper, rougheye/blackspotted, and yelloweye rockfishes, shortspine thornyhead increase relative to No Action; whereas, allocations for chilipepper (north of 40°10′ N. lat.) and yellowtail (north of 40°10′ N. lat.) rockfishes decrease relative to No Action. Under Alternative 2, the petrale sole allocation is the same as under No Action

These allocations under consideration by the Council are consistent with the criteria described above for National Standard 4.

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.

Management measures were designed to offer increased opportunity to the resource as well as increase overall attainments of stocks, thus allowing participants to attain OY through efficient distribution of the resource among the user groups. This design should allow for efficient access to the resource as well as potentially allow for increased utilization by the various sectors as well as allow for ecosystem needs to be met. Routine management measures have been previously analyzed in prior MSA analyses associated with the harvest specification and management measure processes.

The Council is considering reducing the biennial allocation of widow rockfish to the non-trawl sector by up to 50 percent under the PPA. The allocation structure is currently 300 metric tons (mt) to the non-trawl commercial and recreational sectors, with the remainder of the ACL going to the trawl sector. Fishery landings data demonstrated the non-trawl sector has been under-utilizing the allocation since it increased in the 2021-2022 biennium. In 2025, the non-trawl sector attainment was approximately seven percent. The widow rockfish resource is primarily utilized by the trawl sector, which lands, on average, over 90 percent of their allocation annually. Under Alternative 1, the 2027-28 widow rockfish ACL would decrease by nearly 50 percent from the previous biennium. The realignment of the allocation is likely to improve the efficiency of trawl sector utilization and concomitantly is not expected to decrease the utilization of widow rockfish by the non-trawl sector.

The Council is considering modifications to the slope rockfish complex south of 40°10′ N. lat. The current allocation methodology is complex and may be inefficiently allocating the slope rockfish complex south of 40°10′ N. lat. to the trawl and non-trawl fisheries. The Council is contemplating if implementing a simpler methodology will reflect the needs of the fishery and reducing complexity.

These efforts are consistent with National Standard 5 as they seek to create efficiencies in the utilization of the groundfish resources and do not have economic allocation as the sole purpose.

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 measures in this analysis are consistent with National Standard 6 as they reflect the flexibility of the Council to address the variable and improving status of the fishery yet still meet conservation goals. The harvest specifications and management measures proposed in this analysis reflect current information on differences in catch and, in particular, bycatch of overfished species in the fishery. Additionally, during the biennium, the Council is able to monitor the fishery for indications of overages and apply measures to ensure ACLs are achieved, but not exceeded, through routine inseason action. The management measures in this analysis do not appreciably change this framework but rather reflect implementation of the best information available on the status of stocks managed in the FMP. Inseason actions taken by the Council can include temporal adjustments, spatial adjustments, as well as catch control mechanisms (i.e., trip limits) that are

specific to an area and/or fishery. Routine management measures have been analyzed in previous EAs/EISs and other relevant analytical documents.

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

Development of the Alternatives was achieved through coordinated effort of West Coast fishery managers, enforcement consultants, and other stakeholders over the course of a calendar year at four Council meetings between June 2025 and March 2026. The Council is scheduled to take final action for the management measures portion of the Proposed Action at the April and June 2026 meetings. The Alternatives in this analysis were developed to reduce the overall burden on fishery participants and to achieve management objectives and priorities among the three West Coast states. In general, coordination between managers, enforcement, and other stakeholders reduces duplication in action or effort and, therefore, reduces costs. Such implications of the Alternatives are evaluated in this analysis. As such, this action is consistent with National Standard 7.

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 Council considered the importance of the Pacific Coast groundfish fishery to fishing communities, and the goals of providing for sustained participation of and minimizing adverse impacts to such communities, throughout its process to develop the 2027-28 harvest specifications and management measures. Additionally, these objectives were evaluated in the 2015 EIS from which this analysis tiers.

The 2015 EIS evaluated both the long-term and short-term impacts of alternative harvest management policies on West Coast fishing communities. The short-term impacts of the current Proposed Action are variable and highly linked to the specific fishery. In the commercial non-trawl and recreational fisheries in the EEZ off Washington and Oregon, for example, coastwide trawl and at-sea whiting activities do not differ substantially in context or intensity from the impacts disclosed in the 2015 EIS. These effects were taken into account when the Council adopted the recommended FPA. Target species catch estimates for each Alternative are projected based on the management measures. The catch estimates provide the base information for estimating ex-vessel revenue and personal income impacts at the community level (with the port group area as the unit of analysis for community impacts).

The short-term impacts for IFQ trawl fisheries, notably the midwater trawl fishery, by contrast, are substantially different in context and intensity from the impacts disclosed in the 2015 EIS. The primary driver of this change is the reduction of widow rockfish to the fishery, which is driven by the new findings of the recent widow rockfish assessment. In brief, the 2027-28 harvest specifications for widow rockfish could be lowered by more than half as compared to the No Action allocation. This reduction, coupled with the allocation reductions of yellowtail north of

40°10′ N. lat. and canary rockfish, due to reduced ACLs for these stocks, could have significant negative impacts on the midwater trawl fishery and the communities where these species are principally landed.

The short-term impacts to non-trawl fisheries, both commercial and recreational, could also be substantially different in relation to the rebuilt status of yelloweye rockfish and cowcod. These stocks were considered overfished in the 2015 EIS, but are now considered rebuilt. While these stocks are no longer overfished, the Council is still considering limited retention in commercial and recreational non-trawl sectors. If adopted, the 2027-28 biennium harvest specifications and management measures would be the first time these stocks have been retained in these fisheries in over twenty years. Thus, retention may have slightly positive benefits to commercial and recreational non-trawl fisheries. Qualitatively, retention of these stocks is an acknowledgment that the last twenty years of restricted access to areas where yelloweye rockfish and cowcod are caught has brought about their rebuilding some 40 years early. Overall, retention is likely to generate minor improvements to the socioeconomics impacts of the fishery participants and communities However, these impacts under the Proposed Action do not significantly vary from the current, 2026 management of the fishery.

Overall, the harvest specifications and management measures proposed by the Council for the 2027-28 biennium are structured to maximize the positive economic impacts of the fishery on fishing communities under current conditions and improve fishery participation over time, consistent with the conservation requirements of the MSA. The proposed management measures were developed with the goal of maintaining, if not improving, the stability of the fishery and thus fishing communities. The proposed management measures may require, in some instances, fishermen to modify their fishing strategies to avoid bycatch of co-occurring species with reduced ACLs. This behavioral change may reduce attainment in the commercial fishery for some stocks, but may also improve attainment of other stocks. As such, this Proposed Action as a whole is consistent with National Standard 8.

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 Proposed Action is consistent with National Standard 9. Minimizing bycatch generally, as well as of recently rebuilt and other sensitive species, such as canary rockfish and shortspine thornyhead, is an important component of the Proposed Action. Routine management measures for the groundfish fishery are designed to reduce incidental bycatch of recently rebuilt and constraining species, including but not limited to, cowcod, canary, yelloweye, and bronzespotted rockfishes. These routine management measures consist of a mixture of non-retention, trip limits, gear specifications, and depth/time-based area closures.

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

The Proposed Action is consistent with National Standard 10. The routine management measures implemented for the Pacific Coast groundfish fishery have been designed to promote safety at sea and have been previously analyzed in the 2015 EIS. The management measures included in the

Proposed Action would not decrease safety at sea, when compared to No Action, which is the continuation of current, 2026 management. While the changes to ACLs and trip limits proposed in the 2027-28 harvest specifications may encourage additional effort for certain target species, it is not expected to change how the overall groundfish fishery operates. Meaning, commercial and recreational groundfish fishermen are likely to retain species and/or tonnage on the same schedule as in previous years. Further, if implemented, the Proposed Action may allow fishermen to spread out trips over good weather periods, rather than be constrained to poor weather periods in order to attain limits. Such flexibility would promote the safety of human life at sea.

6.3 Fishery Impact Statement

To be completed after the April 2026 Council meeting.

7. Other Applicable Laws

7.1 Executive Order 13175

EO 13175 is intended to ensure regular and meaningful consultation and collaboration with Tribal officials in the development of federal policies that have Tribal implications, to strengthen the U.S. government-to-government relationships with Indian Tribes, and to reduce the imposition of unfunded mandates upon Indian Tribes. The Secretary recognizes the sovereign status and comanager role of Indian Tribes over shared federal and Tribal fishery resources. In section 302(b)(5), the MSA reserves a seat on the Council for a representative of an Indian Tribe with federally recognized fishing rights from California, Oregon, Washington, or Idaho.

The U.S. government formally recognizes the four Washington coastal Tribes (Makah, Quileute, Hoh, and Quinault) that have treaty rights to fish for groundfish. In general terms, the quantification of those rights is 50 percent of the harvestable surplus of groundfish available in the Tribes' usual and accustomed fishing areas (described at 50 CFR 660.324). Each of the treaty Tribes has the discretion to administer its fisheries and to establish its own policies to achieve program objectives. The Council process and tribal representatives allow for meaningful and timely engagement between the Council, NMFS, and Tribes as actions and alternatives are developed.

The Proposed Action may impact the Federally-recognized fishing rights of the Pacific Coast treaty Indian tribes. Tribal comments and participation at the Council played a role in developing and analyzing the Proposed Action, therefore it is consistent with EO 13175.

8. Lists

8.1 Persons and Agencies Consulted for this Document

- Pacific Fishery Management Council (PFMC) and Contractors
- National Marine Fisheries Service (NMFS)
    - Regional Office
    - NOAA General Counsel Northwest
    - Northwest Fisheries Science Center
    - Southwest Fisheries Science Center
    - Contractors
- Groundfish Management Team, including representatives of:
    - California Department of Fish and Wildlife (CDFW)
    - Oregon Department of Fish and Wildlife (ODFW)
    - Washington Department of Fish and Wildlife (WDFW)
    - Treaty Tribes

8.2 Tiered NEPA Documents

National Marine Fisheries Service is the corporate author for these documents.

Harvest Specifications and Management Measures for 2015-2016 and Biennial Periods Thereafter: Includes the Reorganization of Groundfish Stock Complexes, Designation of Ecosystem Component Species and Amendment 24 to the Pacific Coast Groundfish Fishery Management Plan to Establish a Process for Determining Default Harvest Specifications, Final Environmental Impact Statement. 2015. https://repository.library.noaa.gov/view/noaa/12461.

Amendment 27 to the Pacific Coast Groundfish Fishery Management Plan and 2017-2018 Harvest Specifications and Management Measures: Final Environmental Assessment. 2016. https://repository.library.noaa.gov/view/noaa/16384.

Pacific Coast Groundfish Fishery 2019–20 Harvest Specifications, Yelloweye Rebuilding Plan Revisions, and Management Measures; Environmental Assessment/Magnuson Stevens Act Analysis/Regulatory Impact Review/ Regulatory Flexibility Act Analysis. 2018. https://media.fisheries.noaa.gov/dam-migration/2019-20-gf-spex-ea-final.pdf.

Amendment 29 to the Pacific Coast Groundfish Fishery Management Plan and 2021-22 Harvest Specifications and Management Measures Environmental Assessment/ Regulatory Impact Review/ Regulatory Flexibility Analysis. 2020. https://s3.amazonaws.com/media.fisheries.noaa.gov/2020-12/2e2.0648-BJ74.2021-22%20Harvest%20Specifications.EA-RIR12092020-final.pdf?null=

Amendment 30 to the Pacific Coast Groundfish Fishery Management Plan, 2023-24 Harvest Specifications, and Management Measures Environmental Assessment (EA) and Regulatory Impact Review (RIR). 2022. https://media.fisheries.noaa.gov/2022-12/FinalEA-FONSI_WCRGroundfish_Amend30.pdf.

Amendment 33 to the Pacific Coast Groundfish Fishery Management Plan, 2025-26 Harvest Specifications, and Management Measures Environmental Assessment and Regulatory Impact

Review, and Magnuson-Stevens Fishery Conservation and Management Act Analysis. 2024. https://www.fisheries.noaa.gov/s3/2024-12/SpexA33-EA-MSA-RIR-IRFA-FONSI-FINAL.pdf

8.3 References

Carretta, J. V., E. M. Oleson, K. A. Forney, A. L. Bradford, K. Yano, D. W. Weller, A. R. Lang, J.Baker, A.J. Orr, B. Hanson, J. E. Moore, M.Wallen, and R. L. Brownell Jr. 2024. DRAFT U.S. Pacific marine mammal stock assessments: 2022. U.S. Department of Commerce, NOAA Technical Memorandum NOAA-TM-NMFS-SWFSC-XXX U. S. 48p http://www.fisheries.noaa.gov/s3/2025-03/Draft-2024-Pacific-SARs.pdf

Cope, J.M. 2025 Catch only Projection of Black Rockfish (Sebastes melanops) in state and federal waters off Oregon. Agenda Item G.3, Attachment 17, September 2025. Pacific Fishery Management Council. pcouncil.org/documents/2025/08/g-3-attachment-17-2025-catch-only-projection-of-black-rockfish-in-state-and-federal-waters-off-oregon.pdf/

Cope, J.M., V. Gertseva, R.C. Rosemond, A.D. Whitman, and F.P. Caltabellotta. 2025. Status of the Rougheye and Blackspotted rockfishes stock off the U.S. West Coast in 2025. Pacific Fishery Management Council, Portland, Oregon. 347 pp

Dick, E.J., J. C. Field, N. Grunloh, and T. Rogers. 2025. The Status of Chilipepper in U.S. Waters off California, Oregon, and Washington in 2025. Pacific Fishery Management Council, Portland, OR.

Doney, S. C., L. Bopp, and M. C. Long. 2014. Historical and Future Trends in Ocean Climate and Biogeochemistry. Oceanography 27(1):108-119.

Field, J.C. 2025 Revised catch only projection for bocaccio in 2025. Agenda Item G.3, Attachment 18, September 2025. Pacific Fishery Management Council. pcouncil.org/documents/2025/08/g-3-attachment-18-catch-only-projection-for-bocaccio-in-2025.pdf/

Hamel, O.S. 2025. Catch Only Projection for Darkblotched Rockfish. Agenda Item G.3, Attachment 15, September 2025. Pacific Fishery Management Council. pcouncil.org/documents/2025/08/g-3-attachment-16-catch-only-projection-for-darkblotched-rockfish.pdf/

Harley, C. D. G., A. Randall Hughes, K. M. Hultgren, B. G. Miner, C. J. B. Sorte, C. S. Thornber, and coauthors. 2006. The impacts of climate change in coastal marine systems. Ecology Letters 9(2):228-241. DOI: https://doi.org/10.1111/j.1461-0248.2005.00871.x.

Jannot, J. E., K. A. Somers, V. J. Tuttle, J. Eibner, K. E. Richerson, J. T. McVeigh, and coauthors. 2022. Marine Mammal Bycatch in U.S. West Coast Groundfish Fisheries, 2002-19. DOI: https://doi.org/10.25923/h6gg-c316.

Jannot, J. E., A. Wuest, T. P. Good, K. A. Somers, V. J. Tuttle, K. E. Richerson, R. S. Shama,and J.T. McVeigh. 2021. Seabird Bycatch in U.S. West Coast Fisheries, 2002-18. DOI: https://doi.org/10.25923/78vk-v149.

Johnston, M. A., Rosemond, R. C., Whitman, A., Perl, E., Barros, M., Champagnat, J., Schamp, A., Schiano, S., Prior Caltabellotta, F., Gertseva, V., Taylor, I., Oken, K. and Berger, A.

2025. Status of Yelloweye rockfish off the U.S. West Coast in 2025. Pacific Fishery Management Council. 144 pp.

Kinneen, M., Goodman, M. C., Sulc, A., Balstad, L., Diaz, R., Randrup, K., Patrone, W., Spencer, L., Morell, A., Rovellini, A., Dedrick, A., Grunloh, N., Bargas, M., Hopkins, S., Gersteva, V., Oken, K., Taylor, I., Haltuch, M., & Hamel, O. (2025) Status of widow rockfish stock off the U.S. West Coast in 2025. Pacific Fishery Management Council, Portland, Oregon https://www.pcouncil.org/documents/2026/02/d-2-attachment-1-status-of-widow-rockfish-stock-off-u-s-west-coast-in-2025.pdf/

Lanseth, B. 2025. Catch Only Projection for Canary Rockfish. Agenda Item G.3, Attachment 14, September 2025. Pacific Fishery Management Council. pcouncil.org/documents/2025/08/g-3-attachment-14-catch-only-projection-for-canary-rockfish.pdf/

National Marine Fisheries Service (NMFS). 2017. Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion; Reinitiation of Section 7 Consultation Regarding the Pacific Fisheries Management Council's Groundfish Fishery Management Plan. December 11, 2017, NMFS Consultation Number: F/WCR-2017-7552. https://media.fisheries.noaa.gov/dam-migration/s7-groundfish-biop-121117.pdf.

NMFS. 2018. Environmental Assessment and Magnuson-Stevens Fishery Conservation and Management Act Analysis, Regulatory Impact Review, Initial Regulatory Flexibility Review, for Gear Changes for the Pacific Coast Groundfish Fishery's Trawl Catch Share Program. December 2018. https://media.fisheries.noaa.gov/dam-migration/gf-gear-final-ea-11-2018.pdf.

NOAA (National Oceanic and Atmospheric Administration).2026. El Niño/Southern Oscillation (ENSO) Diagnostic Discussion. Climate Prediction Center. National Centers for Environmental Prediction. NOAA/National Weather Service www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.pdf

NOAA. 2017. Policy and Procedures for Compliance with the National Environmental Policy Act and Related Authorities Companion Manual for NOAA Administrative Order 216-6A. https://www.noaa.gov/sites/default/files/2021-10/NOAA-NAO-216-6A-Companion-Manual-03012018%20%281%29.pdf.

Oken, K. L. 2025. Catch Only Projection for Shortspine Thornyhead. Agenda Item G.3, Attachment 15, September 2025. Pacific Fishery Management Council. pcouncil.org/documents/2025/08/g-3-attachment-15-catch-only-projection-for-shortspine-thornyhead.pdf/

Oken, K.L., I.G. Taylor, M.L. Feddern, A.D. Whitman, F.P. Caltabellotta. 2025. Status of the yellowtail rockfish stock off the U.S. West Coast north of 40°10′ in 2025. Pacific Fishery Management Council, Portland, Oregon. 207 p.

PFMC (Pacific Fishery Management Council). 2006. Pacific Coast Groundfish Fishery Management Plan To Conserve and Enhance Essential Fish Habitat (EFH) Designation and Minimization of Advise Impacts Coast Exclusive Economic Zone WA OR and CA. https://cdxapps.epa.gov/cdx-enepa-II/public/action/eis/details?eisId=81056

PFMC. 2019. Changes to Pacific Coast Groundfish Essential Fish Habitat Conservation Areas and Boundaries of the Trawl Gear Rockfish Conservation Area, Amendment 28 Final Environmental Impact Statement. Pacific Fishery Management Council, Portland, Oregon. 422. https://www.pcouncil.org/actions/amendment-28-pacific-coast-groundfish-essential-fish-habitat-rockfish-conservation-area-modifications-and-magnuson-act-discretionary-closures/

PFMC-2022. Pacific Coast Fishery Ecosystem Plan for the U.S. Portion of the California Current Large Marine Ecosystem. Pacific Fishery Management Council, Portland, OR, March 2022. https://www.pcouncil.org/documents/2022/04/pacific-coast-fishery-ecosystem-plan-march-2022.pdf/.

PFMC. 2023. Amendment 31 to the Pacific Coast Groundfish Fishery Management Plan Groundfish Stock Definitions, including Area Delineations, for Black Rockfish, anary Rockfish, Copper Rockfish, Dover Sole, Lingcod, Pacific Spiny Dogfish, Petrale Sole, Quillback Rockfish, Rex Sole, Sablefish, Shortspine Thornyhead, Squarespot Rockfish, Vermilion Rockfish and Vermilion/Sunset Rockfish https://www.pcouncil.org/documents/2023/10/stock-definitions-analytical-document-the-preferred-alternative.pdf/

PFMC. 2025. Amendment 35 to the Pacific Coast Groundfish Fishery Management Plan Groundfish Stock Definitions for Blackspotted, Chilipepper, Redbanded, Rougheye, Widow, Yelloweye, and Yellowtail Rockfishes, and English Sole https://www.pcouncil.org/documents/2025/12/analysis-for-proposed-amendment-35-to-the-pacific-groundfish-management-plan-in-support-of-the-final-preferred-alternative.pdf/

PFMC. 2026a. Pacific Coast Groundfish Fishery 2027-28 Harvest Specifications And Management Measures. Draft Analytical Document Showing The Preliminary Preferred Alternative Management Measures And The Preferred Alternative For Harvest Specifications. Pacific Fishery Management Council. Portland, Oregon.

PFMC. 2026b. Preliminary Draft Socioeconomic Analysis for the 2027-28 Harvest Specifications and Management Measures. *in Press*

PFMC. 2025c. Draft: Status of the Pacific Coast Groundfish Fishery. Stock Assessment and Fishery Evaluation. Pacific Fishery Management Council. Portland, Oregon

PFMC. 2026d. Analysis for Amendment 37 to the Pacific Coast Groundfish Fishery Management Plan, Phase 2 Stock Definitions: The Final Preferred Alternative for 48 Groundfish Species Determined to be in Need of Conservation and Management and Stock Definitions for 27 Species not Defined under Previous Amendments

PFMC. 2026e. Pacific Coast Groundfish Fishery Management Plan. Pacific Fishery Management Council. Portland, Oregon. https://www.pcouncil.org/groundfish-fishery-management-plan-and-amendments/

PFMC and NMFS. 2019. Changes to Pacific Coast Groundfish Essential Fish Habitat Conservation Areas and Boundaries of the Trawl Gear Rockfish Conservation Area Final Environmental Impact Statement, Magnuson-Stevens Act Analysis, Regulatory Impact Review, and Regulatory Flexibility Analysis.

https://www.fisheries.noaa.gov/resource/document/changes-pacific-coast-groundfish-essential-fish-habitat-conservation-areas-and.

Richerson, K. E., K. A. Somers, J. E. Jannot, V. J. Tuttle, N. B. Riley, J. T. McVeigh, and K.M. Nichols. 2026. Observed and Estimated Bycatch of Salmon in U.S. West Coast Fisheries, 2002-24. https://repository.library.noaa.gov/view/noaa/72422

Scavia, D., J. C. Field, D. F. Boesch, R. W. Buddemeier, V. Burkett, D. R. Cayan, and coauthors. 2002. Climate change impacts on U.S. Coastal and Marine Ecosystems. Estuaries 25(2):149-164. DOI: 10.1007/BF02691304.

Somers, K. A., K. E. Richerson, V. J. Tuttle, and J. T. McVeigh. 2025. Estimated Discard and Catch of Groundfish Species in the 2024. U.S. West Coast Fisheries Northwest Fisheries Science Center, NOAA technical memorandum NMFS NWFSC 182. DOI: https://doi.org/10.25923/teda-x859.

Taylor, I.G. (2025) Catch Only Projection for Petrale Sole. Agenda Item G.3, Attachment 13, September 2025. Pacific Fishery Management Council. pcouncil.org/documents/2025/08/g-3-attachment-13-catch-only-projection-for-petrale-sole.pdf/