

Preliminary Draft

Agenda Item F.6
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June 2024

PRELIMINARY DRAFT

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

Environmental Assessment (EA) and Regulatory Impact Review (RIR)¹

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And

Pacific Fishery Management Council (Council)

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¹ This preliminary draft does not contain the evaluation of regulatory actions required by Executive Order 12866 (Regulatory Planning and Review) and the Regulatory Flexibility Act. Those evaluations provided separately.

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1. Introduction

We, the Pacific Fishery Management Council (Council) and the National Marine Fisheries Service (NMFS), are analyzing the environmental effects anticipated from setting harvest specifications and management measures for the 2025-26 groundfish fisheries managed under the [Pacific Coast Groundfish Fishery Management Plan](#) (hereafter, the Groundfish FMP).

1.1 This Environmental Assessment (EA) applies the Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) regulations currently in effect (50 CFR 1506.13). Proposed Action

In accordance with [Magnuson-Stevens Fishery Conservation and Management Act \(MSA\)](#), 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
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 to 200 nautical miles 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 need to respond to new scientific data and information about the stocks and stock complexes and the needs of fishing communities, to provide additional tools to ensure catch limits are not exceeded, and to afford additional fishing opportunities where possible.

The action also must be consistent with the [National Standard Guidelines](#) (50 CFR 600.305) for fishery management.

1.3 Tiering and Reference Documents

We are tiering (40 CFR 1501.11) this document from the “Harvest Specifications and Management Measures for 2015-16 and Bienniums Thereafter, Final Environmental Impact Statement”

² Ecosystem Component (EC) species are not considered “in the fishery” and, OFLs, ABCs, and ACLs are not set for EC species (Section 1.2.1.2, 2015 EIS)

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(hereafter, this is referred to as the 2015 EIS). The 2025-26 biennium is the fifth period tiered from the 2015 EIS. As such, the 2015 EIS is incorporated by reference as are EAs evaluating the 2017-18, 2019-20 2021-22, and 2023-24 bienniums, which hereafter are referenced as such. These documents are posted on the [NOAA Fisheries website](#).

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

- Draft Harvest Specifications Section of the Pacific Coast Groundfish Fishery 2025-26 Harvest Specifications and Management Measures ([Agenda Item F.6, Attachment 2, June 2024](#), PFMC 2024a). This document evaluates 2025-26 harvest control rules and related harvest specifications and routine and new management measures. Hereinafter, referred to as the Draft Council Analytical Document.
- Appendix B Draft California Quillback Rockfish Rebuilding Plan Analysis ([Agenda Item F.6, Attachment 3, June 2024](#), PFMC 2024b). Evaluation of the rebuilding plan for the California stock of quillback rockfish. Hereinafter referred to as California quillback rockfish rebuilding plan.
- Preliminary Draft Socioeconomic Analyses for the 2025-26 Harvest Specifications and Management Measures (PFMC 2024c) presenting current information on fishery economic conditions and estimated commercial and recreational socioeconomic impacts of the Alternatives considered in the decision-making process. Hereinafter, referred to as the Draft Socioeconomic Analysis.
- Stock Assessment and Fishery Evaluation (SAFE, PFMC 2024d). SAFE documents summarize the biological condition of managed stocks, stock complexes, and fisheries and the socioeconomic condition of the recreational and commercial fishing industries. .

These documents are incorporated by reference and summarized to describe the proposed action and Alternatives. Updated versions of the analytical documents listed above will be produced to support Council decision making at its June 2024 meeting.

1.4 Public Process

Section 5.4 of the Groundfish FMP describes the specific implementation procedures for specifications and management measures. The Council discussed the proposed 2025-26 harvest specifications and management measures at five meetings between June 2023 and June 2024. 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. Pacific Whiting treaty meetings and documents are available on the [NOAA Fisheries website](#). This EA 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

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in 2023 and 2024, this draft EA will support Federal rulemaking after final Council action, which includes a public comment period noticed in the Federal Register. Public comment on this draft will inform the contents of the final EA and our decisions are based on its analysis.

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2. Alternatives

Fishery managers must adapt to constantly changing fishery and ecosystem conditions while respecting 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 EA 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 the best scientific information available (BSIA), as required by MSA National Standard 2, to the HCR. The Alternatives analyzed in this preliminary draft EA are the No Action Alternative, which reflects the continued use of harvest control rules without best scientific information applied (BSIA) from the 2023-24 biennium in 2025 and 2026, and four Action Alternatives under which we would apply either default HCRs (Alternative 1) with BSIA applied or alternative HCRs (Alternatives 2-4). A set of rebuilding parameters are considered for California stock of quillback rockfish under Alternatives 1, 2, and 4. 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 32 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 2022 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 default HCRs for each biennial cycle. The discretionary action is the HCR; therefore, this component is referred to as the **HCR** component throughout this document.
- (2) The Council makes additional adjustments as needed to optimize³ the fishery, referred to as the **Management Measures** component throughout this document.

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 Preliminary Preferred Alternative, we prepare an environmental review under NEPA. We also prepare analyses

³ Optimize means achieving OY and preventing overfishing, per statutory obligations and as described in Section 1.2, Purpose and Need.

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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 four Action Alternatives evaluated in this EA reflect refined proposals that the Council will consider when taking final action at its June 2024 meeting.

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 (40 CFR 1508.1(m)).

Therefore, our analysis in this tiered EA is focused on substantive changes that have not been analyzed in the past: (1) changes to default HCRs, and (2) new management measures.

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 annual catch limits (ACL). We incorporate this section by reference. It describes a process by which we determine overfishing limits (OFL), acceptable biological catches (ABC), 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)
- [SAFE Document](#)

These default HCRs and resulting harvest specifications (OFLs, ABCs, and ACLs) are part of Action Alternative 1.

The Council may decide to diverge from a default HCR. Of approximately 100 fish species managed under the Groundfish FMP, we changed four HCRs in 2017-18, four in 2019-20, five in 2021-22, and three in 2023-24. In this 2025-26 cycle, we are considering alternative HCRs for California stock of quillback rockfish (hereinafter ‘California quillback rockfish), Dover sole, shortspine thornyhead, and rex sole. Alternative 2 contemplates alternative HCRs for Dover sole, shortspine thornyhead, rex sole and a rebuilding strategy for the California stock of quillback rockfish. Alternative 3 contemplates a California Department of Fish and Wildlife proposal for California quillback rockfish harvest specifications and Alternative 4 contemplates a zero (0) fishing mortality rebuilding strategy for the same stock.

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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) describes all 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 this suite of management measures implemented at the outset of the biennium, if necessary to achieve conservation objectives (referred to as “inseason actions”).

2.3.1 Management Measure Adjustments for the 2025-26 Biennium

For the 2025-26 biennium we will adjust routine management measures defined in Sections 6.6 to 6.9 of the 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.

The management measures the Council recommended for the 2025-26 biennium are minor variations to existing management measures (i.e., deductions or allocations of ACLs or adjusting

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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 Draft Council Analytical Document that support the Council's decision-making process under the MSA.

In addition to routine management measure adjustments, a list of new management measures is being considered. Most of the new management measures are minor administrative updates and corrections for various ongoing monitoring and management processes. However, one new management measure, the California Quillback Rockfish Rebuilding Plan, is discussed in this EA. The following is a complete list of new management measures Proposed Action:

- Develop directed open access fishery permit (see [Agenda Item E.7.a, NMFS Report 1, November 2023](#)).
- Align the electronic monitoring discard species list in regulation with the list that was in the vessel monitoring plan for the exempted fishing permit.
- Allow recreational anglers to stop and/or anchor in Federal waters while inside of a Recreational Rockfish Conservation Area.
- Require recreational anglers to possess a descending device aboard their vessel while fishing in Federal waters.
- Remove the management line for shortspine thornyhead at 34° 27' N. latitude and recombine area-specific allocations into coastwide allocations.
- Update to the scientific name of Pacific sand lance and the common name of Pacific spiny dogfish in Federal regulation.
- Implement a rebuilding plan for California quillback rockfish

These management measures are not time-limited and may be in place beyond the 2025-26 biennium or until otherwise modified.

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 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 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, experimental fishing permits, incidental open access, bycatch in other fisheries, etc. We explained these deductions in Section 4.2.1.1 of the 2015 EIS. A new method to calculate off-the-top deductions for groundfish mortality estimates in research and incidental open access fisheries was adopted for this biennium. Proportionally, the proposed deductions for this biennium did not substantively change from the last management period and are largely consistent with past deductions,

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although the actual amounts may vary. (Chapter 1 in the Draft Council Analytical Document describes these deductions for each alternative.)

- Establishing **set-asides** to account for incidental catch of non-whiting species in the catcher-processor and mothership (at-sea) sectors targeting Pacific whiting. Although not part of the proposed action, we establish set asides to account for Pacific whiting catch in tribal, non-tribal, research, and bycatch in those sectors.⁴ Although establishing these set asides is not part of the Proposed Action, we account for them in our evaluation of impacts in this tiered EA.
- Adjusting short-term, **two-year trawl/non-trawl allocations** for stocks where the allocation is not defined in the Groundfish FMP (so-called “Amendment 21 allocations”). Existing short-term allocations will continue during the 2025-26 biennium except for widow rockfish to better account for the needs of the fishery
- **Informal allocations** in the form of harvest guidelines 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.
- Establishing or adjusting **Annual Catch Targets (ACTs)**. The existing yelloweye rockfish ACT for non-trawl fisheries will be adjusted while a recreational ACT for California copper rockfish south of 34° 27' N. lat. will be established, replacing the current statewide ACT. An existing ACT for California quillback rockfish will also be removed, as it does not provide a useful metric for the low ACL. As defined in Section 2.2 of the Groundfish FMP, an ACTs 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 harvest guidelines or strategically to accomplish other management objectives in Section 4.7 of the Groundfish FMP.”

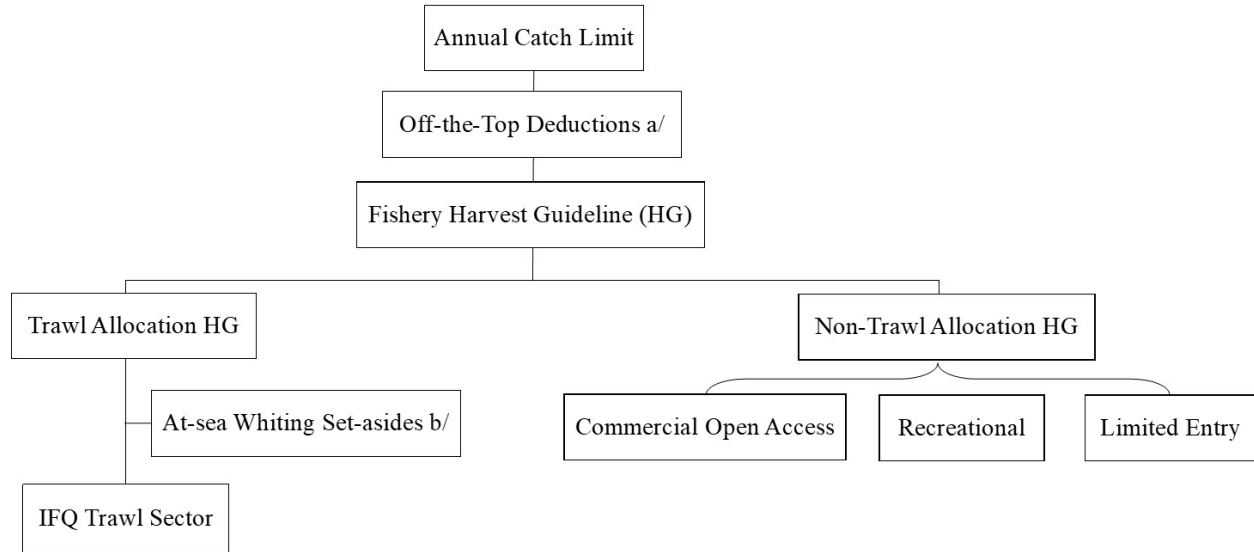
In addition to the short-term (two-year) allocations described above, Section 6.3.2 of the Groundfish FMP defines fixed allocations for a variety of stocks. Sablefish north of 36° N latitude is allocated according to the scheme depicted in FMP Figure 6-1. Once the share for tribal fisheries is deducted along with incidental catch in fisheries not targeting it, Pacific whiting is allocated between the two at-sea (catcher processor and mothership) sectors and the shoreside IFQ fishery according to percentages specified in the FMP. The FMP specifies a “trawl/non-trawl” division between the shoreside IFQ fishery and non-trawl commercial and recreational sectors for 17 stocks and stock complexes listed in FMP Table 6-1.⁵ Finally, because Pacific halibut bycatch is managed through individual bycatch quotas in the IFQ fishery, an allocation is made for that species. Modifying these allocations requires an FMP amendment.

⁴ See for example the 2023 Pacific Whiting Final Rule at [89 FR 34783](#).

⁵ Table 1-6 of the 2022 SAFE Document shows limited entry trawl and non-trawl sector allocations as defined in Amendments 21 and 29, which were previously evaluated in during previous biennial cycles (see the 2005 EIS and 2020 EA). Note that although described as the “trawl-non-trawl” allocation, gear switching is allowed in IFQ fishery. Prior to implementation of the IFQ program in 2011 only trawl gear was allowed in this sector.

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As depicted in Figure 1, the non-trawl fishery harvest guideline is further allocated among commercial and recreational fisheries. For a concise enumeration of these allocations and catch accounting measures considered for the 2025-26 biennium, see the [April 2024 Action Items checklist](#).



a/ Deductions for research, exempted fishing permits, tribal fisheries, and other fisheries not targeting groundfish (“incidental open access”)

b/to account for at-sea mortality of non-whiting stocks

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.

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: 2023 Harvest Specifications

The NOAA NEPA Companion Manual (Section 6.B.i, p. 9) defines the No Action Alternative as “no change from current, ongoing management” (NOAA 2017). *CEQ’s Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations* (46 FR 18026, March 23, 1981) 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 does not use a true no change scenario, as to do so would ignore BSIA. If, in the rare instance where Federal rulemaking was delayed, the harvest specifications management measures in place in 2024 would continue until rulemaking process was finalized. In Council Analytical Document we use the 2023 harvest specifications and fishery performance as No Action for comparative purposes to the proposed Action Alternatives only. This comparison is useful for Council and stakeholders as it can show

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the relative change of values between biennia across the Alternatives. Sufficient fishery data is not available for 2024, when this EA was prepared.

Unlike in previous biennial harvest specifications NEPA analyses, where the No Action Alternative constituted the application of default HCRs to BSIA. In terms of this process, No Action for harvest specifications is unlikely to be adopted as it does not represent BSIA. In rare instance where Federal rulemaking was delayed or somehow curtailed, No Action would continue until a time when Federal rulemaking was finalized. No Action, in brief, would result in the continuation of harvest specifications found in regulations at the end of 2024. However, for analytical purposes we are using 2023 harvest specifications, because we have fishery data for that year, allowing comparison of catch and ex-vessel across the Alternatives. Sufficient fishery data is not available for 2024, when this EA was prepared.

Unlike in previous biennial harvest specifications NEPA analyses, where the No Action Alternative constituted the application of default HCRs to BSIA, in this EA No Action represents harvest specifications that are in place in the previous (2023-24) biennium. We also assume that management measures in place in the 2023-24 biennium remain in place during the 2025-26 biennium. Under this logic, catch control measures (trip limits, bag limits, seasons, etc.) could be adjusted during the biennium to achieve but not exceed 2023 ACLs.⁶ We determined that characterizing the No Action Alternative this way allows a more realistic comparison between current conditions and those anticipated during the upcoming biennium.

Differences in harvest specifications in 2023 and 2024 are relatively small, meaning that the use of 2023 specifications in the analysis does not meaningfully affect the conclusions. Where appropriate, we use 2024 management measures that were not in place in 2023 as a basis of comparison of the Action Alternatives to No action. In particular, commercial and recreational management measures were adopted for the 2023 and 2024 biennium to address concerns regarding California quillback rockfish. In 2023-24, quillback rockfish coastwide is managed in the nearshore rockfish complexes north and south of 40°10' N lat. In 2023 Groundfish FMP Amendment 31 defined quillback rockfish off California as its own stock. Stock complexes are managed to a summed ACL for the component stocks. Beginning in September 2023, the State of California (for State waters) and the Council adopted a suite management measures to reduce mortality as the annual catch target (ACT) was exceeded. Chapter 5, Section 1.2 of the Draft Council Analytical Document details these measures. Briefly, the management measures prohibited retention of quillback in groundfish fisheries off California and established area based commercial trip limits for certain groundfish that co-occur with California quillback rockfish. At their November 2023 meeting, the Council took action to continue the 2023 commercial management measures into 2024 with minor adjustments. In March 2024, the Council adopted recreational fishery management measures in March 2024 to change time/area-based closures for the 2024 recreational fishery .

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

⁶ In the detailed management measures and socioeconomic analyses 2023 ACLs are used to represent the No Action Alternative, because fishery data contributing to the analyses is available for that year but not for 2024.

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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 2022 SAFE document. The Draft Council Analytical Document show the resulting default (this Alternative), Action Alternative 2, Action Alternative 3, and Action Alternative 4 harvest specifications (OFLs, ABCs, ACLs, and where applicable, ACTs) being considered for the 2025-26 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 consistent with default ACLs and we conclude do not represent a material change in management intensity.

The status of California quillback rockfish is overfished and a rebuilding plan must be developed. The rebuilding plan is discussed below in section 2.4.6. Beginning with the 2025-26 biennium the California quillback stock will be managed is removed from the nearshore rockfish complexes. Measures necessary to limit catch of California quillback rockfish to the ACL values (1.26 mt in 2025 and 1.47 mt in 2026) are under the default HCR ($P^* 0.45$, $SPR .55$) are of particular note. These ACLs require minimizing catch through retention prohibitions, catch control measures, and time/area closures for fisheries in nearshore areas where the stock occurs in the commercial non-trawl and recreational fishery off California. the Draft Council Analytical Document Chapter 5, Section 2 describes measures applied to commercial non-trawl (fixed gear) fisheries and Chapter 8, Section 2 describes the recreational management measures in California. Alternative 1 comports to the California quillback rockfish rebuilding analysis (Langseth 2023) for $SPR 0.55$ and is projected to rebuild the stock with a 50 percent probability by 2062, within the statutory maximum time to rebuild of 2071 (T_{max}) and represents a 69.4 percent probability of rebuilding by 2071 (T_{max}).

For the purpose of analysis, the GMT presented four options for California recreational fishery season structures (time and depth-based closures). These options are described in Chapter 8, Section 2.2.1 of the Draft Council Analytical Document. Option 4 represents the season structure adopted by the Council in March 2024 ([Agenda Item F.8.a, Supplemental CDFW Report 2, March 2024](#)) as an inseason action for the remainder of the calendar year and identified as its Preliminary Preferred Alternative in April 2024. As noted in those sections and above, the management measures addressing California quillback rockfish are essentially the same under Alternative 1 as those implemented in 2024 to manage California quillback rockfish catch to the California ACT and in response to the declaration that the stock was overfished in late 2023. As part of the “default” rubric it is assumed that California quillback rockfish continue to be part of the nearshore rockfish stock complexes. However, as described above for No Action, California and the Council have already implemented measures that effectively treat California quillback as a separate stock.

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This indicates that overall management intensity does not substantially change compared to No Action

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

Under this Alternative we diverge from the default HCRs to address conservation objectives, socioeconomic concerns, management uncertainty, or other factors necessary to meet management objectives. Alternative HCRs are considered for four stocks: Dover sole, rex sole, shortspine thornyhead, and California quillback rockfish (Table 1). This Alternative incorporates all the routine adjustments to management measures described in Action Alternative 1 but with adjustments in the nominal values of various allocations, catch accounting limits, and catch control measures consistent with changes in ACLs where Alternative HCRs are applied. The rationale for the Alternative 1 HCRs is as follows:

Dover sole: The default HCR sets the ACL equal to a constant catch level of 50,000 mt. However, projections of stock size in 2025-26 indicate that a constant 50,000 mt ACL would exceed the ABC. So as not to exceed the ABC, the ACL set equal to the ABC or 47,424 mt in 2025 and 42,457 mt in 2026.

Rex sole: Increasing P^* from 0.40 to 0.45 results in a slightly more risk tolerant increase in the ACL, which would allow the trawl fleet greater flexibility in the event that participation and fishing effort increases.

Shortspine thornyhead: Under Alternative 2, the P^* increase from 0.40 to 0.45 for this stock is more risk tolerant. The 40-10 adjustment is applied because the stock is in the precautionary zone (below the target biomass level but not overfished) and would reduce the likelihood of this stock becoming a constraining species to the nonwhiting bottom trawl sector. Shortspine thornyhead could constrain commercial fishing behavior in the 2025-26 biennium because of increases in co-occurring sablefish ACLs under the default HCR, due to increased abundance estimated in the most recent stock assessment (Johnson, *et al.* 2023). In a common seasonal harvest strategy, the bottom trawl fleet targets Dover sole, thornyheads, and sablefish together on the continental slope (referred to as the DTS strategy). The non-nearshore gear fishery targets sablefish and also catches shortspine thornyhead in association with that species. Fishing effort could expand due to the increased availability of sablefish which may result in increased catches of this shortspine thornyhead. The higher P^* of 0.45 is slightly more risk tolerant but would allow greater fishing opportunity for sablefish, a higher value species.

California quillback rockfish: Under Alternative 2, the Council is considering the “ABC Rule” rebuilding strategy. In April 2024, the Council chose the “ABC rule” rebuilding strategy as its preliminary preferred rebuilding strategy. Under this rebuilding strategy the ACL is set equal to the ABC based on a pre-specified management risk tolerance (P^*) and the scientific uncertainty (σ) reducing the ABC from the overfishing limit (OFL). This calculation applies the ABC harvest rate with category 2 time-varying $\sigma = 1.0$ and a $P^* = 0.45$, as described in the Draft Council Analytical Document. The projected target rebuilding year under this strategy is 2060, which is sooner than the maximum permissible time (TMAX) under National Standard 1 Guidelines of 2071. The estimated probability of rebuilding by TMAX is 0.736 (73.6 percent). This alternative HCR results in 2025-26 ACLs that are not substantially different than those

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resulting from the default HCR (400 kg greater in 2025 and 300 kg greater in 2026). A draft rebuilding plan is included as Appendix B to the June 2024 Analytical Document. The alternative California quillback rockfish stock rebuilding HCR results in ACLs that are effectively identical to those under the default HCR (see Table 1). As described in the Draft Council Analytical Document the same types of management measure controls would be necessary under this Alternative. As explained above for Action Alternative 1, management measure intensity would not change from the level in 2024.

As described in the Draft Council Analytical Document the same types of management measure controls described under Alternative 1, would be used under Alternative 2 to manage catch to the ABC Rule ACL specifications.. As explained above for Action Alternative 1, management measure intensity would not change from the level in 2024. Under Action Alternative 2, the shortspine thornyhead trawl/non-trawl allocation would be changed by combining the current within-sector allocations north and south of 34°27' N. latitude into a single coastwide allocation for each sector. Combining these area allocations dictates a specific procedure to recompute the trawl/non-trawl split to address existing quota share holdings. .

[Agenda Item F.5, Supplemental GMT Report 2, April 2024](#) describes the reallocation procedure, provides a rationale for the reallocation, and presents preliminary draft analysis of the proposed reallocation the Draft Council Analytical Document Chapter 9E includes further description and analysis. The GMT states that the reallocation “is needed because shortspine thornyhead allocation reductions in 2025-26 are expected to constrain fisheries, specifically by requiring substantial trip limit reductions to stay within the non-trawl allocation and potentially limiting targeting flexibilities of bottom trawl vessels.” These constraints emerge from the substantial reduction in the shortspine thornyhead ACL compared to No Action, even with the application of the alternative HCR for this stock.⁷ Historically, attainment of the allocation south of 34°27' N. latitude has been low. For example, in 2023 total catch was only 4% of the ACL set for that portion of the stock. As explained above in relation to the HCR change, in addition to constraints imposed on catching shortspine thornyhead, the attainment of substantial increases in sablefish ACLs north and south of 36° N (see the Draft Council Analytical Document) could be constrained by the shortspine thornyhead ACL and resulting allocations, because the two species tend to be co-occurring. Sablefish is an economically important stock for both IFQ bottom trawl and non-nearshore fixed gear fisheries. As noted above, since the current allocation is specified in the Groundfish FMP, this action would require an FMP amendment.

2.4.4 Action Alternative 3: Alternative Harvest Control Rules, Associated Change in Management Intensity

This Alternative implements all of the default/alternative HCRs and management measures described under Alternative 2 except for California quillback rockfish.

California quillback rockfish: Alternative 3 harvest specifications for California quillback rockfish were proposed by CDFW during the November 2023 Council meeting as detailed in [Agenda Item E.2.a. Supplemental CDFW Report 2, November 2023](#). The ABC/ACL value is the result of a 2025 OFL of 8.41 with a category 3 buffer using a $P^*=0.40$ to obtain an ABC/ACL=

⁷ Shortspine thornyhead is a single coastwide stock but to date separate ACLs are established north and south of 34°27' N. latitude.

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5.06 mt. The management measures proposed under Alternative 3 would be expected to be similar to, if not the same as, measures adopted for the 2023-24 biennium (PFMC 2022). Those measures did not restrict the commercial and recreational nearshore fishery as proposed under Alternative 1 or Alternative 2. The Draft Council Analytical Document indicates this Alternative would implement restrictions on California quillback rockfish possession but not constrain the fishery otherwise to limit impact to California quillback mortality. . This Alternative was removed from consideration at the March 2024 Council meeting, as described below in Section 2.4.7

2.4.5 Action Alternative 4: Alternative Harvest Control Rules, Associated Change in Management Intensity

This Alternative implements all of the default/alternative HCRs and management measures described under Alternative 2 except for California quillback rockfish.

California quillback rockfish: This Alternative is specific to California quillback rockfish and does not impact fisheries off of Washington or Oregon. Under Alternative 3, considers the “F = 0 rebuilding strategy. F = 0 assumes no fishing mortality and has a 50 percent probability of rebuilding the stock by 2045 and a 99.9 percent probability of rebuilding by 2071 (T_{max}). This Alternative rebuilds the stock on the fastest schedule; however, it assumes that there would be no mortality in any fishery, groundfish or otherwise To achieve this parameter, the Draft California quillback rockfish rebuilding plan and the Draft Council Analytical Document indicate the entire groundfish fishery off of California would need to be closed to eliminate risk of any mortality from the fishery. These documents also describe the potential of California quillback rockfish mortality from non-groundfish fisheries could not be controlled through this action. Management intensity off of California. would substantially increase under Alternative 4 when compared to the other Alternatives. It is debatable if this scenario could be achieved; however, this analysis includes this Alternative for comparative purposes to the preliminary preferred California quillback rockfish rebuilding parameter of Alternative 2 in the rebuilding plan .

Table 1. Proposed Action Alternatives showing harvest control rules (HCR) under consideration by the Council

Stock	Alternative 1 – Default HCR	Alternative 2 – Alternative HCR	Alternative 3 – Alternative HCR	Alternative 4– Alternative HCR
Dover sole	P*= 0.45 Constant catch ACL = 50,000 mt 2025-26 ACL (mt) 50,000	P*=0.45 ACL=ABC 2025-26 ACLs (mt): 47,424, 42,457	Not applicable	Not applicable
Rex Sole	P* = 0.40 ACL=ABC 2025-26 ACLs (mt): 3,967; 3,310	P*= 0.45 ACL=ABC 2025-26 ACLs (mt): 4,550; 3,719	Not applicable	Not applicable
Shortspine thornyhead	P* = 0.40 ACL=ABC 2025-26 ACLs (mt)*: 711, 713	P*= 0.45 ACL=ABC, 40-10 adjustment 2025-26 ACLs (mt)*: 816, 825	Not applicable	Not applicable

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Stock	Alternative 1 – Default HCR	Alternative 2 – Alternative HCR	Alternative 3 – Alternative HCR	Alternative 4– Alternative HCR
California quillback rockfish	ACLs with P*=0.45, SPR 0.55 2025-26 ACLs (mt): 1.26, 1.47	Rebuilding plan “ABC Rule” HCR, P* = 0.45 2025-26 ACLs (mt): 1.3, 1.5	ABC=Category 3 buffer w/ P*= 0.40 2025-26 ACLs (mt) 5.06	Rebuilding plan “F = 0” 2025-26 ACLs (mt):0

*Sum of ACLs specified north and south of 34°27' N. latitude.

2.4.6 California Quillback Rockfish Rebuilding Plan

Based on the most recent stock assessment (Langseth, *et al.* 2021), the status of California quillback rockfish was determined to be overfished ([Agenda Item F.2, Attachment 2, March 2024](#)). The Council must develop and implement a rebuilding plan consistent with MSA §304(3). Development of the rebuilding plan is part of the Proposed Action because its parameters will determine 2025-26 harvest. A

As a general note, California quillback rockfish inhabit nearshore waters, with the majority of fishing mortality occurring in State waters (0-3 nautical miles from shore). Per 16 U.S.C. 1851(a)(3), the Council and NMFS are required to manage stocks throughout their range. The Council and NMFS only have the authority to implement fishery management regulations in Federal waters, and the State of California has discretion to implement management complementary to Federal action or other management actions in its State waters. This rebuilding plan would be in effect only in the EEZ; however, mortality of quillback rockfish off California in both Federal (3-200 nm) and State waters would be accounted for up to the ACL. Therefore, analysis of the effects of these management measures will be limited to the portion of the stock’s range found in the EEZ. Whether similar rebuilding measures are enacted in State waters by the State of California is outside the scope of this action. However, because this is a trans-boundary stock, whether or not rebuilding can be achieved in the proposed timeline depends on the State of California implementing management in its waters to complement this Federal action.

Overall rebuilding trends represented by Alternative 1 (SPR 0.55) and Alternative 2 (ABC rule) HCRs are functionally identical in that they did not deviate until well into the rebuilding period. Alternative 1 would have a slightly lower probability of rebuilding (69.4 percent) within the required timeline, compared to Alternative 2 (73.6 percent) with the ABC rule. Alternative 1 would also take two years longer (2062) for the stock to reach the target rebuilding level, compared to Alternative 2 (2060). Alternative 4 would rebuild the stock in shortest amount of time, with median rebuild of 2045 and a 99.9 percent of rebuilding by T_{max} . The Council adopted Alternative 2 as their preliminary preferred and compared that rebuilding parameter against Alternative 4 in the California quillback rockfish rebuilding plan. Alternative 4 would have devastating socioeconomic impacts on fishing communities as it would likely require a complete groundfish closure in the EEZ off California; whereas, Alternative 2 is most similar to the current management of the fishery and allows restricted access to the resource in the northern half of the state. Management intensity is intrinsically tied to the rebuilding parameter the Council adopts for this stock. The preliminary preferred rebuilding parameter is Alternative 2.

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2.4.7 Alternatives Considered, but not analyzed further

The Council halted further analysis of Alternative 3 for California quillback rockfish in April 2024. The Alternative 3 harvest specifications are based on assumptions made from the 2021 stock assessment and not the adopted 2023 rebuilding analysis (Langseth 2023) results. The process for developing the harvest specifications is described in [Agenda Item E.2.a, Supplemental CDFW Report 2, November 2023](#). This decision was based on initial analysis which determined harvest specification values were greater than those estimated in the adopted 2023 rebuilding analysis and represented harvest levels beyond what would appear biologically reasonable for a rebuilding population. As such, Alternative 3 does not comport with the MSA rebuilding requirements and BSIA per National Standard 2. The preliminary analyses are provided in the Draft Council Analytical Document.

3. Methodology

In this section, we discuss our analytical approach for this tiered EA 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 (40 CFR 1502.23 Methodology and Scientific Accuracy). We note that since preparation of the 2015 EIS, for 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, and changes in gear (NMFS 2018) and adjustments to closed areas (PFMC and NMFS 2019). Refer to the 2024 SAFE Document 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 EA.

3.1 *Groundfish Stocks*

The NEPA determination of significance is based on context and intensity (1978 NEPA Regulations) or affected environment and degree (2020 NEPA Regulations). The context is the groundfish fishery within the U.S. exclusive economic zone (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 intensity or degree of the effect 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?

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- 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 EA.

The Draft 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 EA. 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 harvest control rules) 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 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 (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 stock 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.

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While seven stocks were managed under rebuilding plans when the 2015 EIS was prepared, all but one has been declared rebuilt. However, as discussed in Chapter 2, the California quillback stock was declared overfished in 2023. As part of the Proposed Action a rebuilding plan will be implemented consistent with the stock rebuilding framework described in National Standard 1 Guidelines.

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 four stocks including the HCR derived from the rebuilding plan for California quillback rockfish. We will continue, in future cycles and between those cycles, if necessary, in compliance with the MSA and NEPA, to revise harvest control rules 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, 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 2023 groundfish discard and catch report (Somers, *et al.* 2023). Given that the management framework and resulting management intensity has not substantially changed, we do not address impacts on non-groundfish species in this tiered EA.

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 2025. However, we have the discretion to implement other management measures that we may have discussed during 2023 and 2024 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 “unconnected single actions,” defined by the NEPA regulations at 40 CFR 1501.9(e)(1).

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 the aggregate, 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

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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 2022 SAFE Document 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, while Section 4.1.4.13 specifically addresses the Pacific whiting sector. We do not discuss the impacts of specific allocations or other allocative measures (e.g., sharing agreements, annual catch targets, and harvest guidelines) further in this tiered EA.

3.4 Evaluation of Other Environmental Components

As noted, socioeconomic impacts are derived from the estimated ex-vessel revenue from landings. In some cases, the aforementioned catch projections are used to estimate landings while in other 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 EA. 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, and any incremental effect on the California Current Ecosystem.

4. Environment / Environmental Consequences

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, 19-20, 2021-22, and 2023-24).

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 harvest control rules. 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 SAFE Document provides information on groundfish stocks and fisheries described in the 2015 EIS sections listed above.

The SAFE Document 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 2023) and associated management indicators from which we derive the harvest specifications as of 2022. We incorporate these four tables by reference and summarize the changes since the 2023-24 EA. While the fishery and underlying ecosystem conditions constantly evolve, we determine that the information below has the greatest influence on impacts of the proposed action and Alternatives on managed fish for the 2025-26 biennium.

1. In 2023 new benchmark stock assessments were completed for black rockfish (four model areas), canary rockfish, copper rockfish off California (two model areas), Dover sole, petrale sole, rex sole, sablefish, and shortspine thornyhead. Stock assessment updates (catch only projections) were completed for widow rockfish and yelloweye rockfish. The most recent stock assessments are found on the Council's [website](#). Of these, copper rockfish is among the stocks with the highest vulnerability rating as presented in the 2022 SAFE document Table 2-2. We will continue to focus upcoming stock assessments on these vulnerable stocks when time and resources permit.

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2. Yelloweye rockfish is managed under a 2019 rebuilding plan with a target rebuilding year of 2029. Rebuilding measures and related impacts are discussed in the 2019-20 EA.
3. Quillback rockfish off California was declared overfished in 2023. A rebuilding plan must be implemented for the 2025-26 biennium. The rebuilding plan describes the adopted HCR that is consistent with the stock rebuilding framework described in National Standard 1 Guidelines, and related management measures necessary to constrain catch to the resulting ACLs.

4.1.2 Effects of the Alternatives

No Action Alternative

The No Action Alternative HCRs would result in ACLs that are not based on BSIA. As described in the Draft Council Analytical Document, application of BSIA to default HCRs (Action Alternative 1) results in a decrease in ACLs for most of the managed stocks (see the Chapter entitled 2025-26 Harvest Specifications: The Preferred Alternative Table 2) in the Draft Council Analytical Document).⁸ This means that managing to No Action ACLs would increase the likelihood of overfishing for many stocks. The ACLs for sablefish stocks (separate ACLs are established for portions of the stock north and south of 36° N. latitude) are the notable exception, increasing by more than 200 percent. Maintaining the No Action ACLs for these two stocks would result in substantial forgone harvest opportunity for this valuable species. Furthermore, California quillback rockfish would continue to be managed as part of the nearshore stock complex and harvest specifications would not be set according to a rebuilding plan as required by the MSA when a stock is declared overfished. However, as discussed below, California and the Council took action in 2023 and 2024 to reduce California quillback rockfish catch to levels approaching levels that would be implemented through the rebuilding plan. This includes prohibiting retention of California quillback rockfish in commercial and recreational fisheries, reducing trip limits in fixed gear fisheries for co-occurring species, and modifying the season structure for recreational fisheries in California.

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. For most stocks this is more likely to prevent overfishing while allowing greater realization of economic benefits in cases where BSIA indicates ACLs can be increased compared to No Action. However, the following stocks are called out, because alternative HCRs are considered under Action Alternative 2 and conservation and socioeconomic goals may not be achieved under the default HCRs.

Dover sole: The default Dover sole HCR, a constant catch ACL of 50,000 mt, exceeds the ABC determined from BSIA, which is 47,424 mt in 2025. The 2025 OFL is 51,214 mt so overfishing would not occur in 2025 unless that value is mis-specified or management error results in catch

⁸ 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.

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above the ACL. However, an ACL cannot be set higher than an ABC, therefore use of this HCR for Dover sole is not consistent with the MSA and National Standard guidelines.

Rex sole: Based on the 2023 stock assessment, the rex sole ABC would increase from 1,437 mt under No Action to 3,767 mt under this Alternative. The default HCR maintains the same level of overfishing risk tolerance ($p^* = 0.40$) as under No Action. This will very likely prevent overfishing while allowing greater realization of economic benefits compared to No Action.

Shortspine thornyhead: Based on the 2023 stock assessment, the shortspine thornyhead ABC is substantially reduced compared to the 2023 value (No Action), from 2,078 mt to 716 mt in 2025. (For management purposes, separate ACLs are established north and south of 34°27' N latitude.) The default HCR maintains the same level of overfishing risk tolerance ($p^* = 0.40$) as under No Action. Constraining catch consistent with the results of the most recent stock assessment will have beneficial impacts on the stock in terms of maintaining it around the target biomass level with lower than risk neutral ($p^* < 0.5$) overfishing risk.

California quillback rockfish: In April 2024, the Council did not select Alternative 1 for further consideration as its PPA. The California quillback rockfish default HCR under Alternative 1 represented the default HCR, as used in the 2023-24 management cycle, with a SPR = 0.55 to determine the ACL. This HCR is used in the rebuilding analysis (Langseth 2023) and is projected to rebuild the stock with a 50 percent probability by 2062, within the statutory maximum time to rebuild of 2071 (T_{MAX}) and represents a 69.4 percent probability of rebuilding by 2071 (T_{MAX}). Overall trends represented by Alternative 1 (default) and Alternative 2 (ABC rule) HCRs were functionally identical in that they did not deviate until well into the rebuilding period. Under the Alternative 1 default HCR the stock would have a slightly lower probability of rebuilding (69.4 percent) within the required time period, compared to Alternative 2 ABC rule HCR (73.6 percent). Alternative 1 would also take two years longer (2062) for the stock to reach the target rebuilding level, compared to Alternative 2 (2060).

Management measures necessary to optimize the fishery consistent with the ACLs derived from the default HCRs would be applied. This includes the array of adjustments to sector allocations or limits and related catch control measures described in Section 2.4.2. As discussed there, a variety of measures to limit California quillback rockfish catch would be applied to commercial nearshore and recreational fisheries in California. These would be a continuation of management measures implemented in 2024 (No Action) in response to the stock being declared overfished.

Action Alternative 2

Under this Alternative, alternative HCRs would be adopted for all stocks identified below based on BSIA (using the recent stock assessments and rebuilding analyses conducted in 2023) to better achieve conservation and socioeconomic goals in comparison to No Action and Action Alternative 1. Under this Alternative default HCRs, as in HCR Action Alternative 1, are used for all stocks except as discussed below. Except for California quillback rockfish and Dover sole default HCRs reflect BSIA. Both default and alternative HCRs for rex sole and shortspine thornyhead represent BSIA but the default HCRs may not accommodate fishing opportunity needs within conservation constraints.

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Dover sole: Under this Alternative the ABC is set as a precautionary reduction from the OFL based on the information in the most recent stock assessment. At 47,424 mt in 2025 this is slightly lower than the Action Alternative 1 default HCR ABC based on a constant value of 50,000 mt. The alternate ACL slightly reduces the risk of exceeding the OFL and is consistent with the National Standard 1 Guidelines and the Groundfish FMP management framework. And as noted above, the 2026 ACL value under this Alternative is lower still, emphasizing the conservation need of departing from the 50,000 mt constant value under No Action and Action Alternative 1.

Rex sole: Under this Alternative the risk tolerance would be increased ($P^* = 0.45$) while still being risk averse ($P^* < 0.5$). This increases the ABC from the default HCR value of 3,967 mt to 4,550 mt in 2025. This will reduce the likelihood of adverse socioeconomic impacts while achieving conservation goals pursuant to the MSA and the Groundfish FMP.

Shortspine thornyhead: The Alternative HCR for shortspine thornyhead has a similar policy basis as rex sole, increasing the risk tolerance ($P^* = 0.45$) to mitigate adverse socioeconomic impacts. The ABC in 2015 would be 821 mt in 2025 under this Alternative HCR compared to 716 mt under the default HCR (Action Alternative 1). As discussed elsewhere, shortspine thornyhead co-occurs with sablefish and they are caught together in the DTS bottom trawl fishing strategy. As a result, shortspine thornyhead limits could constrain catch of higher value sablefish. This socioeconomic benefit is achieved with only a small impact on conservation benefits.

Action Alternative 2 also includes changing the allocation scheme for shortspine thornyhead by combining the current geographic split at 34°27' N latitude into a coastwide trawl/non-trawl allocation. While resulting changes in the distribution of fishing effort cannot be forecast, this change would not have a discernable impact on the stock since fisheries catch would still be managed to levels that would prevent overfishing and represent BSIA. Thus, Action Alternative 2 would result in the same level of management intensity as Action Alternative 1 and No Action.

California quillback rockfish: This stock would be managed according to a rebuilding plan. The rebuilding plan has been developed consistent with National Standard 1 guidelines and is intended to rebuild the stock in as short a time as possible “taking into account the status and biology [of the stock], the needs of fishing communities, ... and the interactions of the overfished stock ... with the marine ecosystem...” (MSA §304(e)(4)(A)(i)). At its April 2024 meeting the Council adopted its preliminary preferred HCR consistent with the 2023 Rebuilding Analysis for California quillback rockfish (Langseth 2023). As noted above and in Chapter 2, the resulting 2025-26 ACLs differ only slightly from those under Action Alternative 1 and the stock is projected to rebuild by 2060, two years earlier than under the default HCR. The probability the stock rebuilds by T_{MAX} increases to 0.736 (73.6 percent).

This Alternative employs the same types of measures applied under Action Alternative 1 (described in Section 2.3) As noted above, measures to limit California quillback rockfish catch to levels comparable to those resulting from the rebuilding plan HCR were implemented in 2023 and 2024 and are thus part of the No Action Alternative. Action Alternative 3 includes managing California quillback rockfish under a rebuilding plan, which also necessitates removing it from the stock complex and managing it individually.

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Action Alternative 3

California quillback rockfish: Alternative 3 was not fully analyzed as it was removed from consideration by the Council at their April 2024 meeting.

Action Alternative 4:

California quillback rockfish: This stock would be managed according to a rebuilding plan strategy of $F = 0$, or no fishing mortality. The Draft California quillback rockfish rebuilding plan has been developed consistent with National Standard 1 guidelines and is intended to rebuild the stock in as short a time as possible “taking into account the status and biology [of the stock], the needs of fishing communities, ... and the interactions of the overfished stock ... with the marine ecosystem...” (MSA §304(e)(4)(A)(i)). The rebuilding analysis (Langseth 2023) indicates the $F = 0$ strategy would rebuild the stock in the shortest amount of time. As noted above and in Chapter 2, the resulting 2025-26 ACLs under this Alternative are 0 mt which is a substantial decrease from the already low ACLs of Alternative 1 and Alternative 3. The stock would be projected to rebuild by 2045, 17 years earlier than under the default HCR and 15 years earlier than Alternative 1. Alternative 3 is not compared as it does not meet rebuilding requirements. The probability the stock rebuilds by T_{MAX} increases to 0.799 (99.9 percent). The associated management measures to achieve this parameter would be highly positive for all groundfish stocks and stock complexes for the duration of the rebuilding period. The Draft Council Analytical Document indicates this Alternative would likely require the complete closure of the groundfish fishery off of California as a conservative approach to achieve the 2025 and beyond ACLs under this rebuilding parameter.

Although likely to rebuild the stock in the shortest amount of time, Alternative 4, the “ $F=0$ ” HCR, cannot be realistically implemented, because it would require prohibiting California quillback rockfish catch in all fisheries encountering the stock. This is likely impossible without closing all fishing within the area where the stock occurs. It would consequently result in substantial adverse socioeconomic impacts and be inconsistent with MSA National Standard 8. For these reasons, the Council did not choose this Alternative as its PPA.

4.1.3 Synthesis

The combination of HCRs and management measures is intended to allow groundfish fisheries to attain but not exceed the annual ACLs during the 2025-26 biennium while optimizing the fishery in other ways (e.g., by considering the distribution of fishing opportunity across sectors). However, while in this evaluation we assume that realized catch equals the ACL, historically catch has been well below ACLs for most stocks. As discussed in Chapter 2, the ABC represents a precautionary reduction from the OFL for each stock, making it unlikely that overfishing would occur. ACLs are set equal to the ABC unless additional conservation and management concerns dictate that it be set below the ABC.

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 harvest control rules and management measures under this proposed action, when based on BSIA, will not result in significant impacts to managed fish.

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As noted above, default and alternative HCRs result in lower ACLs compared to No Action for most stocks. The No Action Alternative could result in overfishing because the harvest specifications are not based on BSIA and management measures would not be adjusted to address conservation concerns and optimize the fishery. .

Action Alternative 2 would achieve conservation objectives articulated by MSA National Standard 1 Guidelines and the Groundfish FMP. As noted above, for most stocks and stock complexes catch historically has been less than the ACL. (The [GMT Scorecard](#) shows that in 2023 attainment was below ACLs, in many cases substantially, for all management units.) If similar patterns persist in the 2025-26 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 and disclosed in this tiered EA.

The default constant catch ACL for Dover sole exceeds the ABC determined from the most recent stock assessment (50,000 mt in 2025 versus 47,424 mt under Action Alternative 2), which would slightly increase the risk of overfishing occurring.

Under Alternative 1 the California quillback rockfish 2025-26 ACLs are slightly lower than the preliminary preferred rebuilding ACLs under Action Alternative 2. Under Alternative 3, the 2025-26 ACLs are over four times greater than the preliminary preferred. Alternative 3 has no long-term rebuilding strategy would be in place to ensure that stock rebuilding occurs consistent with the framework described in National Standard 1 Guidelines. Alternative 4 results in the shortest time for rebuilding but would result in devastating impacts to California fishing communities.

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 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. To track and report on impacts to these species, the Council established the Groundfish Endangered Species Workgroup (ESA Workgroup) in 2015. Appendix A of their most recent report ([Agenda Item H.6.a, GESW Report 1, June 2023](#)), which we incorporate by reference, identifies each Biological Opinion and presents the current incidental take allowances and the estimated take from the bycatch reports for humpback whales, short-tailed albatross, eulachon, green sturgeon, and leatherback sea turtles.

The ESA Workgroup confirmed 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. The workgroup continues to monitor the impacts of the fishery and recommend to us, where appropriate, refinements to reduce uncertainty and impacts.

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The Services have determined the Groundfish fishery would not adversely affect other ESA-listed species (except for salmon discussed below) not presented in Appendix A of the ESA Workgroup report.⁹ This tiered EA does not further address these unaffected species.

On August 2, 2021, NMFS issued a final rule 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 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 (non-whiting) coho 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, [E.63a, Supplemental GMT Report 1, November 2023, pp. 8-9](#)), which allows tracking of estimated or assumed bycatch against expected incidental take presented in the Incidental Take Statement attached to the Biological Opinion. The Northwest Fishery Science Center's most recent report (Richerson, *et al.* 2022) was presented to the Council in November 2021 ([Agenda Item E.1.b, Supplemental Revised Report 1, November 2021](#)). The fishery has not exceeded the limits defined in the 2017 Opinion since its publication.

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.

⁹ 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.

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The 2023 List of Fisheries ([88 FR 16899](#))¹⁰ classifies Groundfish FMP fisheries and lists marine mammal stocks taken in the fisheries as follows:

- WA/OR/CA sablefish pot (Category II): Humpback whale, 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, 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 fur seal (Eastern Pacific), white-sided dolphin (CA/OR/WA), and Steller sea lion (Eastern U.S.). The List of Fisheries

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

NMFS [publishes](#) annual marine mammal stock assessment reports (SARs) by region. Each assessment describes the status and biology of the stock along with sources of human-caused and fishery-caused M/SI. Appendix 2 in the report summarizes population status indicators and total/fishery M/SI. The 2023 Pacific SAR includes a reevaluation of stock structure to reconcile ESA distinct population segments (DPSs) with MMPA stocks (Carretta, *et al.* 2023). It identified two demographically independent populations (DIPs) that the sablefish pot fishery interacts with: the Central America/Southern Mexico-CA/OR/WA and Mainland Mexico-CA/OR/WA DIPs. It includes updated assessments for these two humpback whale stocks (pp. 177-200). It notes that these stocks are designated as strategic under the MMPA, because they are listed as endangered under the ESA. In addition, total commercial fishery M/SI is greater than the calculated PBR for the Mainland Mexico-CA/OR/WA DIP and both DIPs are not achieving the zero M/SI rate goal (ZMRG), which is defined as 10 percent of PBR.

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 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 (its remit could be expanded to consider other fisheries). 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 DIPs. NMFS initiated formation of the TRT pursuant to litigation. Under the settlement agreement, NMFS must establish this TRT by October 31, 2025, and convene the first TRT meeting by November 30, 2025. The TRT would then develop the TRP. 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 Zero Mortality Rate Goal (10 percent of PBR) within five years of implementation. Given these timelines, it is

¹⁰ The 2024 proposed List of Fisheries has the same classification (88 FR 62748).

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uncertain whether mitigation measures identified in the TRP would be implemented during the 2025-26 biennium.

The Council is currently considering gear marking and other entanglement risk reduction measures for vessels that operate under the Groundfish FMP that use pot and longline gear, which may be implemented during the 2025-26 biennium.

Section 3.5.4 and Table 3-42 of the 2015 EIS describes the fishery's impacts on non-ESA-listed seabirds and estimates 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 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 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;

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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

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 streamer lines be deployed during setting operations on certain vessels. 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 these resources are difficult to assess; they cannot be predicted quantitatively. In past NEPA documents, we have explained that fishery management actions may have positive or negative 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), indirectly impacting protected species.

Within this analytical context, we find that the proposed harvest control rules and management measures will not change interactions with protected resources. Management-induced changes in the intensity and distribution of fishing effort are far outweighed by ecosystem and other external factors:

- 4 **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, and a habitat compression index as a way of understanding food web dynamics, species distribution, and conditions that can lead to whale entanglement. However, as previously emphasized, we cannot predict how these conditions will play out during the 2025-26 biennium.
- 5 **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

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participants; we only set catch limits and catch controls for the fishery and sectors, which together indirectly affects such behavior.

Based on the 2015 EIS and the 1978 NEPA Regulations, we determine significance under NEPA by looking at the context and intensity of interactions with protected species. Based on the 2020 NEPA Regulations at 40 CFR 1501.3(b), we define significance by the affected environment and degree of effects on protected species. For this tiered EA, we interpret the context as the affected environment, which is the groundfish fishery across multiple sectors and in Federal waters off three states. The intensity or degree of impacts on protected resources will vary based on the ecosystem and external factors listed above and are not a foreseeable consequence of the proposed action.

We note that 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. 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 supports the objectives of protected species mandates. In the NEPA context, this combination aims 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 population 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 FMP (Chapter 7), as amended by [Amendment 19](#) (2006) and [Amendment 28](#) (2019), defines groundfish EFH and identifies Habitat Areas of Particular Concern. The FEIS 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).

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- 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).
- Because bottom trawl and other bottom contact fishing gear have similar adverse habitat effects regardless of the target stock, all bottom trawl and bottom contact gear closures apply to some fisheries occurring in the management area that are not Federally-managed (but have a Federal nexus due to incidental catch of Federally-managed species). For example, we prohibit bottom trawling for pink shrimp (a state-managed species) in EFH Conservation Areas and pot gear fishing in the areas that are closed to bottom contact gear (Groundfish FMP Section 7.4).

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 3,500m 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

None of the Alternatives will result in a significant impact on EFH 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 and Climate

4.4.1 Status/Affected Environment

Ecosystem

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. 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) (PFMC 2022). 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 do not neatly divide 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,

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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 in ecosystems: 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 ecosystem structure and energy flow in marine ecosystems that could lead to unexpected changes or surprises with respect to marine resource and fisheries management activities.

Climate

Both the 2015 EIS (Section 3.4.5) and the Fishery Ecosystem Plan (Section 4.1) detail the effects of climate change on the ecosystem. Climate change is expected to lead to substantial changes in 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 climate 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

Ecosystem

- Section 3.4.3 of the 2015 EIS, which we incorporate by reference, presents the fishery's impacts on the ecosystem. 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 ecosystem simulation modelling of fleets, catch, ecosystem components, and ecosystem health and demonstrated the complexities of these effects. For example,
- Bottom trawl indirectly affected small shallow rockfish and zooplankton (krill), with their populations increasing due to the reduction in predation.
- Fixed gear indirectly affected mesozooplankton (copepods), which increased.
- Pacific whiting trawl indirectly resulted in increases of small planktivores, large piscivorous flatfish, Dover sole, shortbelly rockfish, and shrimp.

The analysis explored the effect on ecosystem attributes of successively adding fleets, finding that forage fish increases with each fleet addition. We take proactive measures when possible. For example, in 2016, we published an environmental assessment for comprehensive ecosystem-based Amendment 1 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

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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 will result in a significant impact on the California Current Ecosystem, 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.

Climate

NMFS “should consider (1) the potential effects of proposed actions on climate change as indicated by assessing the estimated greenhouse gas (GHG) emissions of the proposed action, and (2) the effects of climate change on proposed actions and their environmental impacts.” (NOAA 2017). The Proposed Action does not regulate individual fishermen’s decisions as to how far to travel and what engines to use. However, continued management of the fishery at the same level of intensity, as is the case with the Alternatives evaluated herein, does not entail measures substantially affecting GHG emissions due to fishing, because we do not expect the Proposed Action to substantially change the scale, intensity, degree, or location of fishing. External factors (fuel price, market conditions, oceanographic changes affecting the location of the target groundfish, etc.) are likely to have much greater influence on GHG emissions. Therefore, we do not discuss further the effects of emissions on climate change.

The 2023-24 California Current Ecosystem Status Report notes mixed conditions occurred in 2023 (Figure 2). A strong El Niño began developing in late 2023, but the region is likely to return to neutral conditions before the next biennial management period.

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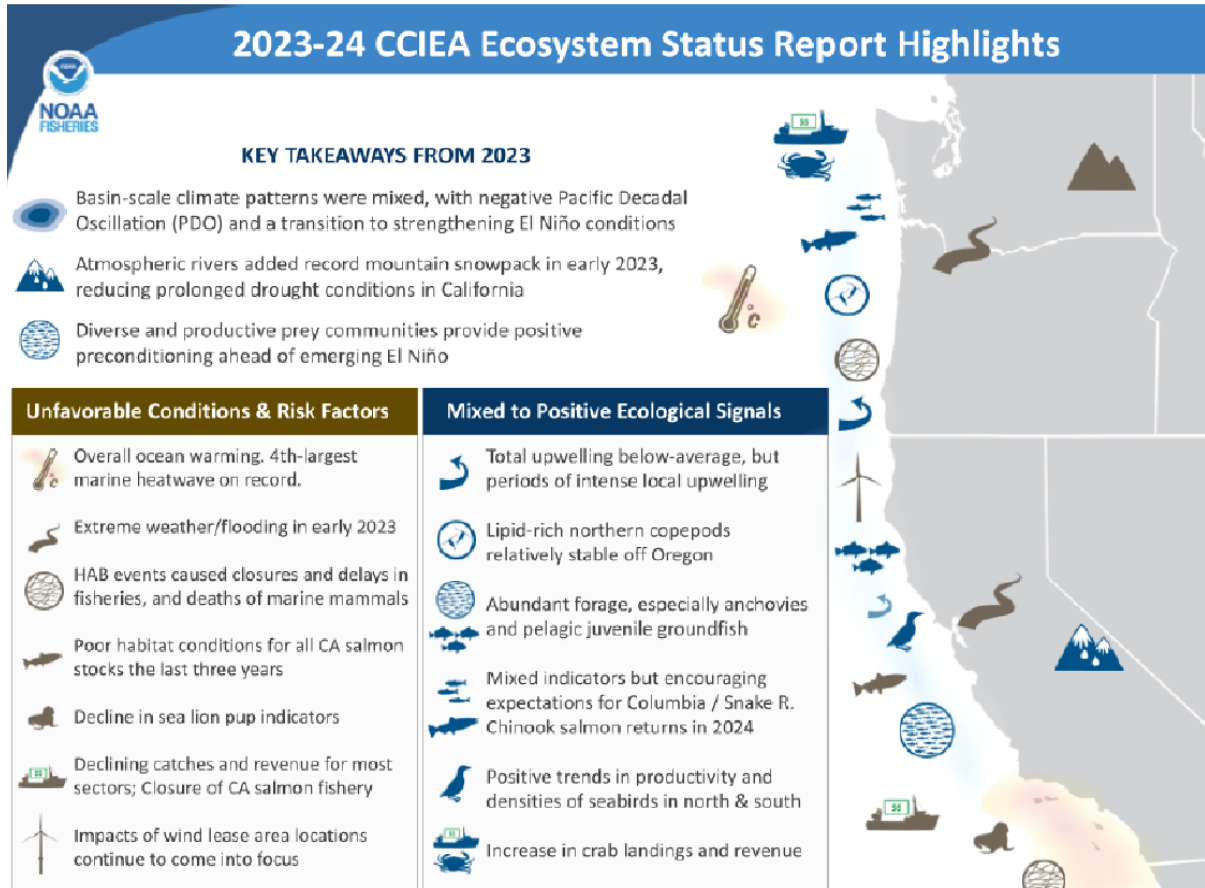


Figure 2. Highlights from the 2023-24 California Current Ecosystem Status Report.

These annual ecosystem status reports, 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 impacts 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 (2022 SAFE Document).

With this information, we adjust our harvest control rules 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.

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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 Draft Socioeconomic Analyses for the 2025-26 Harvest Specifications and Management Measures (hereafter Draft Socioeconomic Analysis) provides the most recent description of the landings and revenue in the commercial, tribal, and recreational groundfish fisheries.

Section 4.1 in the 2023-24 Annual California Current Ecosystem Status Report presents graphs showing trends in fishery revenue. Figure 3 shows shoreside and at-sea (catcher-processor, mothership) groundfish landings and inflation-adjusted ex-vessel revenue since 2017 in a similar format to the graphs in the Ecosystem Status Report. The solid lines indicate one standard deviation above and below mean, represented by the dotted line. These figures show groundfish landings and inflation-adjusted revenue have declined over the past four bienniums (through 2023). These trends are likely independent of management interventions.

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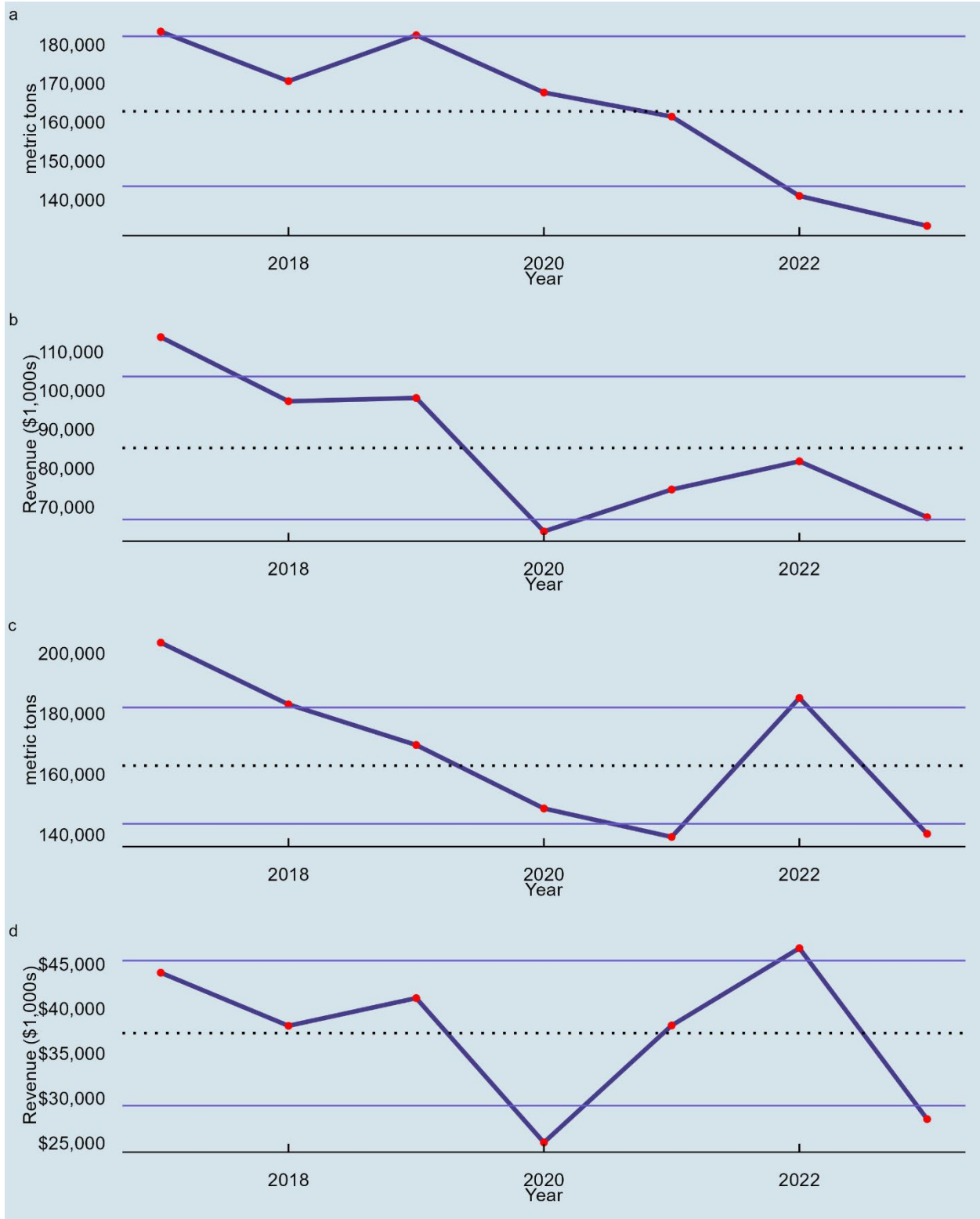


Figure 3. (a) shoreside groundfish landings (mt), (b) shoreside inflation-adjusted revenue (\$1,000), (c) at-sea landings (mt), and (d) at-sea inflation-adjusted revenue (\$1,000), 2017-2023. (PacFIN comprehensive_ft, 4/22/2024)

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Recreational fisheries in the EEZ are managed by the coastal states with Federal limits and management measures decided in the PFMC process. States cannot manage their recreational fisheries to exceed Federal limits (ACLs, harvest guidelines [HGs], etc.); however, the states can specify more conservative management measures than specified in Federal regulations.

Recreational fisheries primarily target groundfish using hook-and-line gear, although groundfish are also targeted by divers using spears. Recreational fisheries extend from shorebased 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). Each State manages their respective recreational fisheries to Federally-specified State harvest guidelines for select stocks. Total recreational catch (landings plus estimated discard mortalities) counts against the non-trawl allocation (see Section 2.3.1.1).

A large proportion of angler fishing effort occurs in California, and particularly Southern California, as shown in Figure 4, which reproduces Figure 2 in the Draft Socioeconomic Analysis. California accounted for 81 percent of coastwide bottomfish plus Pacific halibut boat trips (private and charter), 2012-2023. San Diego, Orange, and Los Angeles counties accounted for 47 percent of coastwide trips during that period.

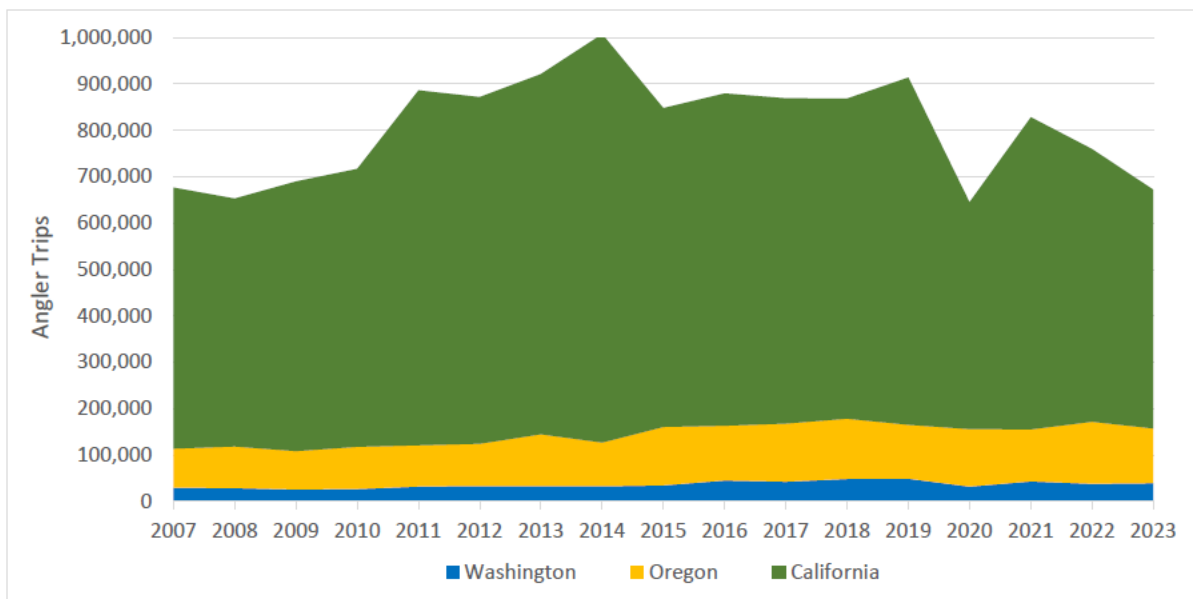


Figure 4. Total bottomfish plus Pacific halibut marine angler boat trips (private and charter) by state, 2007 to 2023. (Source: Figure 2 in Draft Socioeconomic Analysis, April 2024)

4.5.2 Effects of the Alternatives

In addition to NEPA and other applicable laws and executive orders, we have to comply with Executive Order 12866 *Regulatory Planning and Review*, which requires that we determine whether the action could be considered a significant regulatory action. Our Regulatory Impact Review (RIR) provides an analysis of the costs and benefits of the action and Alternatives (see Chapter 7 of this EA).

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Under the E.O. 12866, an action may be considered significant if it has an annual effect on the economy of \$100 million or more, or “adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local or tribal governments or communities.”

NEPA does not have a Federal-wide economic threshold of significance, nor has NMFS established one. The NEPA determination of significance is based on context and intensity (1978 NEPA Regulations) or affected environment and degree (2020 NEPA Regulations). For this EA, we have established the context as the groundfish fishery within the larger west coast fisheries and evaluate the intensity or degree by determining the change in economic impacts across the Alternatives described in Chapter 2.

Section 2.1.1 in the Draft Socioeconomic Analysis explains the methodology used by the GMT to estimate ex-vessel revenue and recreational fishing effort under the Alternatives. **(An updated version of this analysis will be provided to the Council for its June final action but was not available when this draft of the EA was being prepared. The April 2024 version reported on here does not exactly match the range of alternatives considered in this EA.)** Catch or landings projection models are documented in Appendix C to the Draft Council Analytical document. The GMT modeled four scenarios or Alternatives, which are mainly driven by management of recreational fisheries in California in response to the rebuilding ACL for California quillback rockfish. Of these, No Action, Alternative 1, and Alternative 2 align with the Alternatives evaluated in this EA. (Alternative 3 in the economic analysis generally aligns with Action Alternative 2 in this EA but with a California quillback HCR that is not the Preliminary Preferred Alternative, which is included in this EA as part of Action Alternative 2.).

For the California recreational fishery season structure, Alternative 1 in the Draft Socioeconomic Analysis uses Option 3 from the Draft Council Analytical Document, which is a complete closure of the fishery (see Table 7, p. 298). Alternative 2 in the Draft Socioeconomic Analysis incorporates two scenarios driven by bracketing catch projections for the shoreside IFQ fishery. For the California recreational fishery, the Option 1 season structure in the Draft Council Analytical Document is used (see Table 6, p. 297). Section 2.2 and 2.3 in the Draft Socioeconomic Analysis detail the modeling approach, and requisite assumptions made by the GMT, for commercial and recreational fisheries, respectively. Table 1 in Section 2.1.1 relates each modeled scenario to the Alternatives evaluated in the Draft Council Analytical Document.

As described in Section 2.4 of the Draft Socioeconomic Analysis, commercial catch projections are converted into estimates of net revenue for each Alternative. Net revenue and recreational angler effort estimates are then used to estimate changes in income and employment at a sub-regional scale using the NWFSC IOPAC input-output model. These income and employment impacts combine direct, indirect, and induced economic effects resulting from projected changes in recreational angling, commercial fishing, fish processing, and related input supply and industry support activities. Impacts from commercial landings and recreational angling are reported separately but at the same sub-regional scale. However, income and employment impacts from Tribal and at-sea Pacific whiting fisheries are not included in the income and employment impact estimates, because of limitations on data needed to inform the input-output model. Presumably, most of the income and employment impacts associated with at-sea whiting fisheries would accrue in the Seattle region and Washington and Oregon coastal communities; while impacts of

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shorebased tribal groundfish fisheries most likely accrue in Washington Coast communities. Another caution is that analysis of scenarios very different from current conditions (the No Action Alternative) can be biased, because economic impact models are calibrated to current conditions.

The resulting commercial income impact estimates are summarized in Tables 11-13 in the Draft Socioeconomic Analysis while recreational income impact estimates are summarized in Tables 14 and 16. The summed coastwide income impact estimates are shown in Table 2. As noted in the Draft Socioeconomic Analysis, however, any “small differences between the action Alternatives are likely well within the margin of error of the economic modeling.” As shown in the table below, commercial fishery income impacts for Alternative 1 and Alternative 2, are generally similar to each other, but greater than No Action and Alternative 4. Alternative 4, we would expect some reduction in commercial fishery income impacts due to any restrictions on commercial fisheries occurring within the area where the California quillback rockfish stock occurs. Nearshore commercial fisheries off California would be the most affected fishery sector.

Table 2. Summary of coastwide commercial and recreational fishery income impacts (millions of dollars) reported in the Draft Socioeconomic Analysis. (Note that here the reported estimates are rounded to the closest million dollars while in the Draft Socioeconomic Analysis they are rounded to the closest \$100,000.)

Fishery Sector	No Action (2023)	Action Alternative 1	Action Alternative 2	Action Alternative 4
Commercial	\$118	\$188	\$198-199	135 ¹¹
Recreational	\$151	\$230	\$230	\$18.3

For commercial fisheries, the No Action Alternative uses 2023 recorded landings and resulting ex-vessel revenue were used for modeling purposes. Likewise, recreational fishing effort for groundfish and Pacific halibut angler trips was used. The action alternatives are compared to the No Action Alternative levels. While commercial income impacts are reported by sub-region, differences across commercial fishery sectors can be deduced, at least comparatively, from net revenue estimates reported in Section 2.4, Table 11-13 of the Draft Socioeconomic Analysis,. Resulting impacts under the action alternatives are presented comparatively using No Action as a baseline.

In terms of commercial fishery sectors, the nearshore sectors show negative net revenue under the No Action Alternative, which is carried across the action alternatives for the nearshore segment of this fishery ((Section 2.4, Section 2.4, Table 8-10 of the Draft Socioeconomic Analysis). In contrast, the limited entry fixed gear and non-nearshore sectors show substantial increases (\$16.2 and \$8.2 million respectively) across the action alternatives. This reflects a substantial increase in the sablefish ACL under the default HCR and the assumption in the projection models that these sectors’ proportion of the ACL is fully realized in catches. (Market conditions and other factors are likely to belie this assumption.) The TAC for Pacific whiting is set annually outside of this harvest specifications process so in the Draft Socioeconomic Analysis the 2025-26 TAC and allocations are assumed to be the same as 2023. This means that net revenue does not vary across No Action and action alternatives.

¹¹ derived from subtracting all California port estimated income from total coastwide income estimates, Section 2.4, Section 2.4, Table 8-10 of the Draft Socioeconomic Analysis

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The increase of personal income from No Action to Alternative 1 and Alternative 2 is likely derived from the increase in sablefish available to the commercial fishery, while simultaneously recognizing the impact of rebuilding strategies for California quillback rockfish under these Alternatives. Negative economic impacts from the rebuilding strategies under consideration are likely to be confined to California only, as Washington and Oregon fisheries do not interact with this stock. The substantial decline in personal income under Action Alternative 4 compared to the Alternatives shown in reflects the complete closure of all California groundfish fisheries (Table 2).

The proposed change in the trawl/non-trawl shortspine thornyhead allocation scheme under Action Alternative 2 is intended to mitigate the substantial reduction in ACLs for stock components and in relative terms would produce beneficial socioeconomic impacts.

4.5.3 Synthesis

Alternative 1 and Alternative 2 (PPA) are estimated to produce higher commercial fishery income and employment compared to the No Action Alternative. Alternative 1 and Alternative 2 are estimated to produce comparable recreational income impacts, also greater than No Action. Alternative 3 is estimated to result in the highest recreational income impacts, but the proposed California quillback rockfish management approach is inconsistent with MSA requirements for overfish stock rebuilding, and for that reason, the Council indicated it is not under consideration when taking final action. Alternative 4 is estimated to result in a substantial decline in recreational fishery income impacts, because of California quillback rockfish catch would be prohibited under the $F=0$ HCR. Commercial income impacts were not modeled for this alternative. For most commercial fishery sectors income impacts are likely to be broadly similar to Alternative 2 except for those fisheries occurring in the area where the California quillback rockfish stock is distributed, which would most like be the nearshore fixed gear fishery.

For most stocks and stock complexes, catch has historically been less than the ACL. If similar patterns in commercial fishery landings and revenue and recreational fishery angler effort persist in the 2025-26 biennium, actual personal income and employment impacts are likely to be lower than estimated in the Draft Socioeconomic Analysis. As shown in Figure 3, commercial fishery inflation-adjusted ex-vessel revenue has been declining over several previous bienniums. Recreational fishery angler effort occurs predominantly in California and Figure 4 suggests declining effort in California since 2014. Therefore, personal income and employment is likely to be lower in 2025-26 compared to previous years. However, any such declines are not likely attributable to management measure interventions under the Proposed Action.

5. Cumulative Effects

5.1 *Analysis Approach*

This biennial analysis, tiered from the 2015 EIS (Section 4.15), uses the same parameters as the cumulative effects analysis in the 2021-2022 EA. The EEZ constitutes the geographic scope, the temporal scope for past and present actions begins with the 1982 implementation of the Groundfish FMP, and future actions are limited to the 2025-26 period, because we will evaluate the effects of proposed actions for each future biennium as they are developed through Council decision making.

As in previous cycles, this analysis does not identify the specific effects of past actions because we cannot attribute biological, physical, or socioeconomic effects to a specific fishery or non-fishery action across the entire EEZ. We continuously manage the fishery to optimize harvest while minimizing adverse effects on environmental resources. Collectively, the impacts of past actions within our adaptive management system have contributed to the rebuilding of species, management within harvest guidelines, and continued compliance with ESA incidental take statements while accounting for climate change, other environmental trends, and other anthropogenic actions within the EEZ.

5.2 *Reasonably Foreseeable Future Actions*

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 2025-26 biennium.

5.3 *Incremental Cumulative Impact*

We describe the incremental contribution of the proposed action to these cumulative impacts on each resource will be minor as described below.

5.3.1 **Managed Fish**

As we discussed in Section 4.1, we adaptively manage all stocks and stock complexes with 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, climate change effects, bycatch in other fisheries, effects on groundfish essential fish habitat, and other sources of mortality.

Therefore, for the period 2025-26, when combined with the effects of past, present, and reasonably foreseeable future actions, there will not be a significant cumulative impact on the managed fish.

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5.3.2 Protected Resources

As described in Section 4.2, several species (e.g., humpback whales and some stocks of Pacific salmon) that interact with the groundfish fisheries are listed under the Endangered Species Act. The Proposed Action, when combined with the effects of past, present, and reasonably foreseeable future actions will not change the trajectory of any of these protected species and the incremental effect of the action, given the Incidental Take Statement constraints and constant monitoring discussed in Section 4.2, will be minimal. We do not anticipate any difference in the incremental contribution or the cumulative impacts across the Alternatives.

5.3.3 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.

The Proposed Action and Alternatives, when coupled with ongoing and reasonably foreseeable future actions that are not speculative, will not result in any cumulative significant impacts to EFH. The incremental contribution of the Alternatives will be negligible and not discernable across the Alternatives.

5.3.4 Ecosystem

The incremental contribution to cumulative impacts is negligible. Overall impacts from the Proposed Action and Alternatives, when combined with the effects of past, present, and reasonably foreseeable future actions, the incremental effect of the action will not result in significant cumulative impacts on the ecosystem.

5.3.5 Socioeconomics

As we discussed in Section 4.1, and above for Managed Fish, we adaptively manage all stocks and stock complexes with 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, for 2025-26 and beyond, when combined with the effects of past, present, and reasonably foreseeable future actions that are not speculative, there will not be a significant cumulative socioeconomic impact.

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6. Lists

6.1 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)

6.1 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>.

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