DRAFT FOR INITIAL REVIEW / FINAL ACTION

Environmental Assessment/Regulatory Impact Review for Proposed Regulatory Amendment to modify the Pelagic Trawl Gear Definition

Pelagic Trawl Gear Definition

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Note, this version has been revised from the original document posted on May 12, 2025. This version contains minor formatting changes, including for 508 compliance, and contains a minor revision in Section 6.6 to reflect accurate authorship.

Abstract: This Environmental Assessment/Regulatory Impact Review analyzes proposed changes to the pelagic trawl gear definition in paragraph (14) of the definition of "authorized fishing gear" at § 679.2. The North Pacific Fishery Management Council's purpose for this action is to update the regulatory definition of pelagic trawls in Alaska to clearly allow commonly used components in cod ends and bycatch excluder devices, allow instrumentation necessary to monitor and adjust net performance, and remove unnecessary outdated text. Measures under consideration include revising the pelagic trawl gear definition to allow flotation and metallic components in the cod end, remove outdated text related to parallel line trawls, allow flotation aft of either 5.5 inch or 15 inch stretched mesh, allow instruments capable of adjusting the fishing gear, or observing or monitoring gear, catch, fishing activity, or fishing environment to be attached, and to specify where metallic components are allowed.

For definition of acronyms and abbreviations, see online list: https://www.npfmc.org/library/acronyms

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Executive Summary

This Environmental Assessment/Regulatory Impact Review (EA/RIR) analyzes proposed changes to the pelagic trawl gear definition in paragraph (14) of the definition of "authorized fishing gear" at § 679.2 and potential impacts of those changes on social and economic resources, salmon prohibited species catch, and habitat. Measures under consideration include revising the pelagic trawl gear definition to: 1) allow flotation and metallic components in the codend; 2) remove outdated text related to parallel line trawls; 3) allow flotation aft of either 5.5 inch or 15 inch stretched mesh; 4) allow instruments capable of observing, monitoring, or adjusting the fishing gear, catch, fishing activity, or fishing environment (including seafloor clearance) to be attached to pelagic trawl gear and floats, capable of providing up to 100 lb (45.3 kg) of buoyancy, may be attached to or within 6 feet of each instrument; and 5) to specify that metallic components are allowed in pelagic trawl gear aft of either 5.5 inch or 15 inch stretched mesh, between either 5.5 inch or 15 inch stretched mesh and the fishing circle, and/or forward of the fishing circle. This action to update the gear definition is separate from the Council's ongoing efforts to better understand the impacts of pelagic gear on the seafloor and to encourage gear innovations. Throughout this analysis, metallic components could include: 1) electronic instruments that contain metal (e.g. net-sounder devices, cameras, electronic sensors), 2) connectors (e.g. hammerlocks and swivels), and 3) non-electronic components that are made of metal (e.g. chains, weights, etc.). This action to update the gear definition is separate from the Council's ongoing efforts to better understand the impacts of pelagic gear on the seafloor and to encourage gear innovations.

Purpose and Need

The North Pacific Fishery Management Council (Council) adopted the following purpose and need statement in October 2024 (discussed further in Section 1.1):

> *The purpose of this action is to update the regulatory definition of pelagic trawls in Alaska to clearly allow commonly used components in codends and bycatch excluder devices, allow instrumentation necessary to monitor net performance, and remove unnecessary outdated text. The definition of pelagic trawl gear within § 679.2 has remained unchanged since 1993. Clarifying the definition of pelagic trawl gear will also facilitate the process to incentivize trawl gear innovation or other measures to minimize the impacts of pelagic trawl gear on bycatch, sensitive habitat, and unobserved mortality.*

Regulatory changes are necessary to update the pelagic trawl gear definition to allow the use of gear designs commonly used by fishery participants that meet conservation and management goals for pelagic trawl fisheries in the Bering Sea (BS) and Gulf of Alaska (GOA). A physical definition of pelagic trawl gear remains necessary as an enforcement tool to monitor vessel compliance with gear and area closures where use of nonpelagic trawl gear is prohibited.

Alternatives

The following alternatives are described in Chapter 2:

Alternative 1: No Action.

Alternative 2: Revise the definition of pelagic trawl gear to:

Option 1. Specify that the limitations on flotation and metallic components are not applicable to the codend.

Option 2. Remove outdated text related to parallel line trawls.

Option 3. Allow the use of flotation aft of:

Suboption 1: 5.5 inch stretched mesh, or
Suboption 2: 15 inch stretched mesh.

Option 4. Allow instruments capable of observing, monitoring, or adjusting the fishing gear, catch, fishing activity, or fishing environment (including seafloor clearance) to be attached to pelagic trawl gear. Floats, capable of providing up to 100 lb (45.3 kg) of buoyancy, may be attached to or within 6 feet of each instrument.

Option 5. Allow the use of metallic components in the following locations:

Suboption 1: Forward of the fishing circle.
Suboption 2: Aft of the fishing circle and forward of:
a) 5.5 inch stretched mesh, or
b) 15 inch stretched mesh.
Suboption 3: Aft of:
a) 5.5 inch stretched mesh, or
b) 15 inch stretched mesh.

Impact Analysis

Chapter 3 provides a description of the fisheries affected by this action and Chapter 4 analyzes the operational and economic impacts of the proposed alternatives, including the impacts on small entities and the net benefits to the nation. Chapter 5 analyzes environmental impacts including the impacts to salmon prohibited species catch (PSC) and habitat impacts, and Chapter 6 describes the management and enforcement considerations relevant to the alternatives under consideration.

Summary of Changes since October 2024:

This EA/RIR was last presented to the Council at the October 2024 meeting. Since then, analysts have completed the following updates and revisions:

- Updated description of alternatives to reflect revised alternatives and options. (Chapter 2)
    - National Marine Fisheries Service (NMFS) Alaska Region, Sustainable Fisheries Division (AKR, SFD) interprets the existing regulations to limit the use of metallic components in the middle portion of the net (except for connectors and one net sounder device), but allows their use elsewhere on the net. That is, metallic components are allowed in the forward portion of the net (forward of the fishing circle) and the aft portion of the net (aft of 5.5 inch (14.0 cm) stretched mesh).
- Updated analysis of impacts to reflect revised alternatives and options, including an evaluation of net benefits to the nation. (Chapter 4)
- An Environmental Assessment chapter has been added, evaluating the potential impacts of this action on salmon PSC and habitat (Chapter 5)
- Draft revisions to regulations have been added to reflect the revised alternatives and options. (Chapter 6)
    - Chapter 6 has been re-organized to incorporate sections addressing the regulatory approach for technology previously included in Chapter 4.
    - Section 6.6 has been revised with comments on the enforceability of the Council's alternatives and options.
- Magnuson-Stevens Fishery Conservation and Management Act (MSA) and Fishery Management Plan (FMP) considerations. (Chapter 7)

Summary of Alternatives for Decision Making

Table 2-1 in Section 2.3 summarizes the alternatives and options being considered. Under the No Action alternative, many commonly used gear configurations are non-compliant with existing regulations. These include configurations that use flotation in the codend or for bycatch excluder devices, as well as configurations that use metallic components (except connectors or a net-sounder device) located aft of the fishing circle and forward of 5.5 inch stretched mesh. Alternative 2 includes five options that may be selected in combination.

Summary of Items Highlighted for Council Input

Analysts note that it would be helpful for the Council to clarify a few ambiguities, primarily related to Alternative 2, Options 4 and 5. As explained in Section 6.2, there are a couple ways NMFS could implement the options under Alternative 2. Additional guidance and clarity from the Council on the points highlighted in this section will aid NMFS in the proposed rule development process. These issues are discussed further in Chapter 4 and are listed here for ease of reference.

Option 4 (Section 4.2.4)

- The Council should clarify whether it intends for the 100 lb buoyancy limit to apply to net sounders, or if the current regulatory limit of 200 lb of buoyancy for one net sounder should be retained.
- Flotation is limited from use in the forward portion of pelagic trawl gear under the current regulatory definition. This limitation was put in place to prevent the use of flotation in the headropes of pelagic trawl gear and disincentivize vessel operators from using large pelagic trawl nets in shallow water when midwater trawl doors were ineffective (58 FR 17196, April 1, 1993). If the Council intends to maintain limits on the use of flotation in the forward portion of pelagic trawl gear, the Council may want to provide input on how to restructure the buoyancy limitation in Option 4 in a way that would not allow flotation to be used in this manner.
- If all instruments that contain metal are also considered metallic components, the Council should specify how Option 4 and Option 5 should be interpreted to allow or limit the location of such instruments.
- If the Council intends to allow instruments capable of adjusting the catch, fishing activity, or fishing environment (in addition to adjusting gear), it would be helpful for the Council to clarify what those types of instruments might be in order to fully analyze the potential impacts of allowing such instruments. Additionally, if there are specific adjustments or instruments that serve a purpose the Council does not wish to allow, the Council may wish to provide further clarification or specification on which adjustments or instruments are allowed, and/or which are prohibited.

Option 5 (Section 4.2.5)

- The term “metallic components” is used in Option 5 and Option 1. This term could encompass a wide array of commonly used elements that are made of or may contain metal. The impacts of selecting suboptions within Option 5 differ by the type of metallic component allowed in each section of the net. The Council should clarify what universe of components it intends to regulate as “metallic components” in each portion of the net, and suggest parameters for determining what may or may not qualify as a metallic component. Common items in a net that could fall under the umbrella of metallic components–and likely do under the current definition–include metal chains and weights, metal panels, electronic instruments containing metal, and connectors. However, this term could also include components largely made of a material other than metal but containing a

limited amount of metal (*e.g.,* lines made with metal filaments or a metal core). Alternatively, the Council could decide to move away from the term "metallic components" altogether and instead specify what types of components it wants to regulate in each part of the net (i.e., specify where it wants to allow connectors, instruments, metal chains, weights, panels, etc.). Moving away from an ambiguous term that is susceptible to multiple interpretations would be consistent with the purpose of this action to clarify the definition of pelagic trawl gear.

- Assuming the Council intends for instruments to be considered metallic components under Option 5 and Option 4 is selected as part of the preferred alternative, then the Council should select suboptions under Option 5 to identify the location(s) where instruments would be allowed.

1 Introduction

This document analyzes proposed regulatory changes that would apply exclusively to vessels fishing with pelagic trawl gear in the BS and Aleutian Islands (BSAI) and GOA exclusive economic zone (EEZ). Measures under consideration include revising the pelagic trawl gear definition to allow flotation and metallic components in the codend, remove outdated text related to parallel line trawls, allow flotation aft of either 5.5 inch or 15 inch stretched mesh, allow instruments capable of adjusting the fishing gear, or observing or monitoring gear, catch, fishing activity, or fishing environment to be attached, and to specify where metallic components are allowed in pelagic trawl gear. Throughout this analysis, metallic components could include: 1) electronic instruments that contain metal (e.g. net-sounder devices, cameras, electronic sensors), 2) connectors (e.g. hammerlocks and swivels), and 3) non-electronic components that are made of metal (e.g. chains, weights, etc.). This action to update the gear definition is separate from the Council's ongoing efforts to better understand the impacts of pelagic gear on the seafloor and to encourage gear innovations.

This document is an EA/RIR. An EA/RIR provides assessments of the environmental impacts of a proposed action and its reasonable alternatives, the economic benefits and costs of the alternatives, the distribution of impacts, and identification of the small entities that may be affected by the alternatives. This EA/RIR addresses the requirements of the Magnuson-Stevens Fishery Conservation and Management Act (MSA, 16 U.S.C. 1801, et seq.), the National Environmental Policy Act, Executive Order 12866, and the Regulatory Flexibility Act. An EA/RIR is a standard document produced by the Council and the NMFS Alaska Region to provide the analytical background for decision-making.

Under the MSA, the United States has exclusive fishery management authority over all marine fishery resources found within the EEZ. The management of these marine resources is vested in the Secretary of Commerce (Secretary) and in the regional fishery management councils. In the Alaska Region, the Council has the responsibility for preparing FMPs and FMP amendments for the marine fisheries that require conservation and management, and for submitting its recommendations to the Secretary. Upon approval by the Secretary, NMFS is responsible for carrying out the federal mandates of the Department of Commerce regarding marine and anadromous fish.

The proposed action under consideration would amend federal regulations at § 679. Actions taken to amend FMPs or implement regulations governing these fisheries must meet the requirements of applicable federal laws, regulations, and Executive Orders.

1.1 Purpose and Need

The Council adopted the following purpose and need statement to originate this action in October 2024:

> *The purpose of this action is to update the regulatory definition of pelagic trawls in Alaska to clearly allow commonly used components in codends and bycatch excluder devices, allow instrumentation necessary to monitor and adjust net performance, and remove unnecessary outdated text. The definition of pelagic trawl gear within 50 CFR 679.2 has remained unchanged since 1993. Clarifying the definition of pelagic trawl gear will also facilitate the process to incentivize trawl gear innovation or other measures to minimize the impacts of pelagic trawl gear on bycatch, sensitive habitat, and unobserved mortality.*

The Council's purpose for this action is to update the regulatory definition of pelagic trawls in Alaska to clearly allow commonly used components in codends and bycatch excluder devices, allow instrumentation necessary to monitor and adjust net performance, and remove unnecessary outdated text. Measures under consideration include revising the pelagic trawl gear definition to allow flotation and metallic components in the codend, remove outdated text related to parallel line trawls, allow flotation aft of either 5.5 inch or 15 inch stretched mesh, allow instruments capable of adjusting the

fishing gear, or observing or monitoring gear, catch, fishing activity, or fishing environment to be attached, and to specify where metallic components are allowed in pelagic trawl gear. A physical definition of pelagic trawl gear remains necessary as an enforcement tool to monitor vessel compliance with gear and area closures where use of nonpelagic trawl gear is prohibited. Regulatory changes are necessary to update the pelagic trawl gear definition to allow the use of gear designs commonly used by fishery participants that meet conservation and management goals for pelagic trawl fisheries in the BS and GOA.

1.2 History of this Action

In the early 1990s, distinguishing between pelagic and nonpelagic trawl gear emerged as a management measure intended to reduce the bycatch of halibut and crab species. After two short lived rulemakings[1], the Council and NMFS established the current definition of pelagic trawl gear in 1993 (58 FR 39680, July 26, 1993). The 1993 final rule included the current pelagic trawl gear definition to facilitate enforcement and a performance standard to limit contact with the sea floor when PSC allowances had been reached. As explained in the preamble to the proposed rule, the Council and NMFS designed the performance standard with the objective to "reduce halibut and trawl bycatches by discouraging or preventing trawl operations on the seabed when halibut and crab PSC allowances have been reached" (58 FR 17196, April 1, 1993). This is in line with management strategies at that time. When bycatch PSC allowance of halibut or crab were reached, further trawling with trawls other than pelagic trawls was prohibited.

Various closure areas have been recommended by the Council and implemented by NMFS over time and are listed in regulations at § 679.22. Area-based conservation measures, such as closure areas, are one of the many tools used by the Council to achieve sustainable fisheries conservation goals. There are about 200 conservation areas that were established to conserve marine resources and biodiversity, protect vulnerable habitats and ecosystems, and support healthy coastal communities. Many static marine closure areas in the Alaska EEZ are based on the pelagic trawl gear definition, as pelagic trawl gear is the only permissible trawl gear type allowed to operate within their boundaries while nonpelagic trawl gear is banned. A large portion of the EEZ off Alaska (1,026,771 nm^2) is closed to bottom trawling year-round. These conservation and spatial management measures are summarized in the North Pacific Conservation and Spatial Management Areas in Alaska's EEZ Area Summaries and are further described in Section 3.4 of this document (NPFMC 2023a). Under the management system using static marine closure areas, the pelagic trawl gear definition remains necessary to enforce gear compliance in areas closed to nonpelagic trawls.

In the definition of pelagic trawl gear, there is no explicit mention of the codend or of associated restrictions applying to codends attached to pelagic trawl gear. As such, it is not clear from the text of the regulation whether the definition of pelagic trawl gear was intended to apply to the codend attached to pelagic trawl gear. In practice, it was generally assumed that the restrictions on pelagic trawl gear did not apply to the codend. The definition of the term "codend" in § 600.10 originated from a Presidential initiative in 1996 that called for all agencies to review regulations and eliminate or modify those that were obsolete, duplicative, or otherwise in need of reform (61 FR 19390, May 1, 1996). In support of this directive, NMFS consolidated regulations from nine separate parts of Title 50 of the Code of Federal Regulations (CFR) down to two. The consolidated regulations pertained to general provisions of the MSA and NMFS noted that no substantive changes other than those specified would be made. The definition of codend as the terminal, closed end of a trawl net was added to § 600.10 in the final rule implementing the streamlined regulations in 1996 and was not identified to be a substantive change that would impact fishing operations (61 FR 32538, June 24, 1996). There was no explanation provided in the final rule

[1] NMFS published an emergency rule on August 17, 1990 (55 FR 33715) followed by final regulations on January 24, 1991 (56 FR 2700).

detailing why NMFS added the definition of "codend". MSA provisions at part 600 apply to all NMFS regions, including Alaska.

The implications of the combined definitions of codend at § 600.10 and of pelagic trawl gear at § 679.2 were first identified in the June 2023 initial review draft analysis of alternatives that the Council considered to promote Bristol Bay red king crab (BBRKC) stock health.[2]

In June 2023, the Council requested *NMFS and NOAA Office of Law Enforcement (OLE) to work with Council staff and industry to identify revisions to the regulatory definition of pelagic trawl gear to:*

- *clarify that the codend is not intended to be regulated*
- *allow for gear innovation*
- *resolve any inconsistencies in current regulations and/or outdated regulations.*

On October 2, 2023, NOAA Office of Law Enforcement (OLE) hosted a public workshop to engage with stakeholders and fishery participants on ways to revise the trawl gear performance standard so that it is clear, enforceable, and meets Council objectives.[3] Discussion points and a meeting summary were provided to the Council during its October 2023 meeting.[4]

In February 2024, NMFS prepared and presented a discussion paper to the Council addressing issues related to the pelagic trawl gear definition and options to allow for gear innovation.[5] In that discussion paper, NMFS recommended the Council consider several regulatory revisions to address inconsistencies between common gear configurations and the limitations set forth regulations at § 679.2. At that meeting, the Council separated pelagic trawl gear definition work from efforts focused on pelagic trawl gear innovations, ultimately passing a motion, and adopting a new purpose and need statement. The purpose and need statement included a list of alternatives and options for analysis to be included in an initial review.

In October 2024, NMFS prepared and presented the preliminary initial regulatory impact review on potential pelagic trawl gear definition changes to the Council, focusing on solutions reflecting the original goals of the pelagic trawl definition and current gear configurations of today. This analysis also posed questions to gather information to better understand what status quo means, in particular where metallic components are allowed in pelagic gear, as the current definition could be interpreted various ways. The review also posed questions to the Council to develop a specific alternative and options based on conservation goals and discussed two contrasting regulatory approaches for revisions to occur. Subsequently and after extensive public testimony, the Council passed a revised purpose and need statement along with revised alternatives and options that are the focus of this analysis.

1.3 Other Ongoing and related actions

This EA/RIR analyzes the impacts of proposed changes to the definition of pelagic trawl gear. This proposed action is separate from Council's ongoing efforts to better understand the impacts of pelagic gear on the seafloor and to encourage innovation that is expected to reduce potential impacts to the seafloor and improve pelagic trawl gear efficiency and effectiveness. These ongoing actions for trawl gear research, pelagic trawl gear innovation and the trawl gear performance standard are described below.

[2] Available under Agenda item C4 at: https://meetings.npfmc.org/Meeting/Details/2993.
[3] Agenda and review documents available at: https://meetings.npfmc.org/Meeting/Details/1885.
[4] Available under Agenda item E1 at: https://meetings.npfmc.org/Meeting/Details/3003.
[5] Available under Agenda item D1 at: https://meetings.npfmc.org/Meeting/Details/3029.

1.3.1 Pelagic Trawl Gear Research

In February 2024, the Council received a presentation from Dr. Brad Harris and Dr. Craig Rose detailing ongoing work by researchers at Alaska Pacific University to review available information and tools to assess the degree to which fishing gears are contacting the seafloor, and studies on gear impacts, which could be used to evaluate whether additional management actions are needed to mitigate the impacts of fishing gear on benthic habitat and stocks that rely on such habitat. The presentation[6] included:

- a summary of research conducted in the BSAI and GOA to estimate and reduce the impacts of fishing gear on benthic habitat including examples of Council fishery management actions informed by this research;
- a review of the Fishing Effects model, including current uses of the model and potential future applications to inform management actions; and
- an update on the ongoing research to catalog pelagic trawl gear configurations and methods to measure pelagic trawl gear ground clearance and contact with the seafloor.

Following this presentation and additional information provided in the BBRKC closure areas initial review draft analysis, the Council chose to take no further action on the analysis of alternatives for BSAI groundfish fishery area closures due to potential negative impacts on Chinook salmon, chum salmon, halibut, and other PSC species. As described in the Council's motion[7], the Council intends to use in-season information and results from several ongoing research projects (winter pot surveys, crab tagging studies, pelagic and pot gear research) to develop framework agreements for dynamic closures and crab avoidance measures for the BSAI trawl, pot, and hook-and-line sectors to respond to changes in crab abundance and distribution with measurable objectives to evaluate performance. The Council continues to place a high priority on these research projects and encourages funding entities to also prioritize them highly. The Council requested regular updates on ongoing collaborative research:

- In October 2024, the Pelagic Trawl Gear Industry Working Group provided an overview and update to the Council on pelagic gear cataloging, simulation, and field tests. The initiative is in collaboration with The Alaska Pacific University Fisheries, Aquatic Science, & Technology lab, and remains ongoing[8].

Also in October 2024, the Council received a presentation from Dr. Noelle Yochum and Shannon Carroll from Trident Seafoods discussing ongoing pelagic trawl gear research requiring an Experimental Fishing Permit (EFP) that would allow them to test a gear configuration with a limited exemption from paragraph (14)(vii) of "authorized fishing gear" in § 679.2 (which limits the total number of weighted lines allowed). NMFS issued the EFP to Trident on December 12, 2024[9]. The project is focused on testing modified footrope designs aimed at maintaining catch efficiency while minimizing seafloor contact by the footrope when targeting pollock on or near the seafloor (EFP 2024-02). The presentation included:

- an overview of the gear type with detailed discussion on the footrope configuration and potential bottom contact variability and frequency as demonstrated by King 2019.
- a description of challenges in measuring seafloor contact for pelagic trawl gear, including limited technology, contact variability and uncertainty, potentially unreliable data, and time intensive data processing.

[6]Available under Agenda item B1 at: https://meetings.npfmc.org/Meeting/Details/3029.
[7]The Council motion is available under Agenda item C2 at: https://meetings.npfmc.org/Meeting/Details/3029.
[8]The October 2024 Gear Innovation Initiative overview and timeline is available at: https://meetings.npfmc.org/CommentReview/DownloadFile?p=6ef84616-0ee9-4b2b-8e7c-16a3f7ab14dc.pdf&fileName=Gear%20Innovation%20Initiative_10_05_Final%20with%20Appendices.pdf
[9] Information on the pelagic trawl gear footrope EFP can be accessed under the "pelagic gear" heading at: https://www.fisheries.noaa.gov/permit/alaska-exempted-fishing-permits

- an overview of the footrope pilot project modifying the footrope to alter the length and orientation of existing footrope components while maintaining the weight needed to ensure opening of the trawl mouth.

In April 2025, the Council reviewed an application for an EFP submitted by Mr. John Gauvin, under contract with the North Pacific Fisheries Research Foundation.[10] The applicant proposes to develop and test salmon excluders in the BS pollock fishery to optimize salmon escapement under summer fishing conditions where chum salmon is the primary salmon species encountered as bycatch in the pollock fishery. The applicant proposes to conduct field testing in July and August, 2025, during the fishery's "B" season. The applicant proposes to test a new excluder design that will be installed further forward in the net, compared to currently available salmon excluders, where the diameter of the trawl net is much larger. The focus for EFP testing will be to determine the best location for the new excluder in terms of creating an improved opportunity for salmon escapement while minimizing pollock loss. The applicant will deploy cameras, echo-sounders, and light meters in various sections of the net to help understand how fish move through different sections of the net. This should better allow salmon to access the escapement portal(s) because there is more room and less congestion for salmon to find their way to the exit portal as they move back through the net with the target catch. As described in the application, the applicant plans to start by testing the salmon excluder in aft sections of the net (likely 8 inch mesh) and iteratively move forward to larger mesh sections, no larger than 32 inch mesh. This EFP will use data collected in the field from the vessel's headrope sonar, an echo-sounder located in the mesh sections of interest, and cameras to make decisions for each EFP vessel regarding assessment of how fish move through the net and eventually where to cut out the excluder portals for preliminary assessment of escapement potential for the new excluder design.

1.3.2 Pelagic Trawl Gear Innovation

In a February 2024 Council motion,[11] the Council tasked staff with preparing a discussion paper to inform options for incentivizing pelagic trawl gear innovation with the following objectives:

- minimizing bycatch to the extent practicable
- minimizing the impacts of pelagic trawl gear on sensitive benthic habitat and unobserved mortality of stocks that rely on such habitat
- improving or maintaining fishing efficiency
- flexibility for trawl gear innovation within the constraints of other objectives (e.g., adapting to new technologies)

The Council provided direction to staff that the discussion paper should detail:

- the current limitations to gear innovation and modification (e.g., technological or enforcement constraints)
- the process for such gear revisions (e.g., EFP)
- examples of how past changes to gear definitions have been moved through the Council process (e.g., elevated sweeps on nonpelagic trawl gear)
- management tools that could be used to inform metrics to achieve these objectives (e.g., EFH and Fishing Effects model)
- downstream impacts to the management objectives of the various regulatory provisions that use the current definition of pelagic trawl gear and have been built upon the previous actions (if applicable)
- potential displacement and spillover impacts from any potential changes (e.g., PSC or target species catch)

[10] EFP application 2025-01 is available under the Salmon Bycatch heading at: https://www.fisheries.noaa.gov/alaska/resources-fishing/exempted-fishing-permits-alaska.
[11] Available under Agenda item C2 at: https://meetings.npfmc.org/Meeting/Details/3029.

As indicated in Section 8 of the February 2024 BBRKC initial review draft analysis, to be able to enforce a pelagic trawl gear performance standard, there must first be an enforceable definition of the gear type that allows for clear and consistent identification of legal and noncompliant gear. The February 2024 paper attempted to untangle the issues associated with the gear definition from issues associated with the gear performance standard, which have been confusing and difficult to bifurcate in previous Council discussions. The subsequent February Council motion separated work on pelagic trawl gear innovations (aligning with the stated Council objectives) from work towards revising the pelagic trawl gear definition.

In the tasking motion for the pelagic trawl gear innovations paper, the Council stated an intent to "review options for changes to the performance standard following this work." As such, the pelagic trawl gear innovations paper does not focus on the trawl performance standard but on the motion language to highlight current knowledge and collaborative work that could inform a process for incentivization, added regulatory flexibility, and pathways for enforcement, which may guide the Council to identify objectives to minimize pelagic gear impacts. The paper also highlights current research innovations, limitations to innovation, regulatory processes for gear revision, and management tools. Since the trawl gear definitions apply to all federally managed areas in the GOA and BSAI, and NOAA OLE has requested consistency, the Council intends that potential future actions to allow for gear innovation would apply to all vessels using pelagic trawl gear.

The Council expressed an intention that as information becomes available from ongoing research, that information would be included in discussion papers and analyses prepared relating to pelagic trawl gear innovations. The Council expects to review options for changes to the performance standard following this work. A review of the pelagic trawl gear innovation discussion paper is scheduled for June 2024[12].

1.3.3 Fishery Management Goals and Objectives

The Council's groundfish fishery management approach is summarized in Table ES-1 of the FMPS for groundfish of the BSAI and GOA Management Areas. In 1993, NMFS implemented the existing definition of pelagic trawl gear with the stated objective to facilitate enforcement and prosecution of violations of time and area closures for nonpelagic trawl gear. In the same action, NMFS implemented a trawl performance standard to reduce halibut and trawl bycatches by discouraging or preventing trawl operations on the seabed when halibut and crab PSC allowances have been met. Over time since 1993, the Council has recommended and NMFS has implemented numerous changes to management measures to reduce bycatch and protect and conserve sensitive habitats. The table below summarizes the existing management measures applicable and recent or ongoing Council actions that are intended to address the goals of reducing bycatch in pelagic trawl gear fisheries and protecting sensitive habitats from pelagic trawl gear impacts.

[12] June Council meeting agenda: https://meetings.npfmc.org/Meeting/Details/3087

Table 1-1 Management measures and recent or ongoing Council actions intended to reduce bycatch in pelagic trawl fisheries and protect sensitive habitats from pelagic trawl gear impacts.

Management Goal	Existing Management Measures addressing this goal (from Table ES-2 in the BSAI and GOA FMPs)	Recent or Ongoing Council Actions
Bycatch reduction	• Prohibited species catch limits • Retention and utilization requirements • Bycatch reduction programs	• Chum Salmon bycatch reduction measures (Feb 2025) • GOA Tanner Crab discussion paper (Apr 2025) • BBRKC Closure Areas Analysis (Feb 2024) • BBRKC bycatch avoidance - Request for Information (Oct 2022)
Protecting sensitive habitats	• BSAI and GOA Time and Area restrictions (by gear type)	• EFH 5-year reviews (2023) • GOA Tanner Crab discussion paper (Apr 2025) • BBRKC Closure Areas Analysis (Feb 2024) • Pelagic trawl gear performance workshop (Oct 2023) • Pelagic trawl gear catalog research (Ongoing)
Improve Enforcement	• Ongoing consultation, coordination, cooperation with Enforcement partners • Improve monitoring and enforcement data through improved technology	• Trawl Electronic Monitoring (fishing began in Jan 2025) • Pelagic trawl gear definition (this action - June 2025)
Design and adopt management measures that are adaptable to changing conditions.	• Implementation of adaptive management measures • Regular and periodic review of rationalization programs • Programmatic analysis of FMP components • Adaptive monitoring (Observer and Electronic Monitoring)	• Upcoming reviews of the AFA, and Rockfish Programs (June, Apr 2025(T)) • Trawl Electronic Monitoring (fishing began in Jan 2025) • Pelagic trawl gear innovation discussion paper (June 2025) • Pelagic trawl footrope exempted fishing permit (Oct 2024) • Programmatic Evaluation of management policies in consideration of environmental variability. (April 2025 pre-scoping report) • Chum salmon exempted fishing permit (April 2025)

1.4 Description of Management Area

This action would have implications for groundfish fisheries of the United States (U.S.) exclusive economic zone off Alaska including the BS and Aleutian Islands (BSAI) management area and the GOA management area (Figure 1-1).

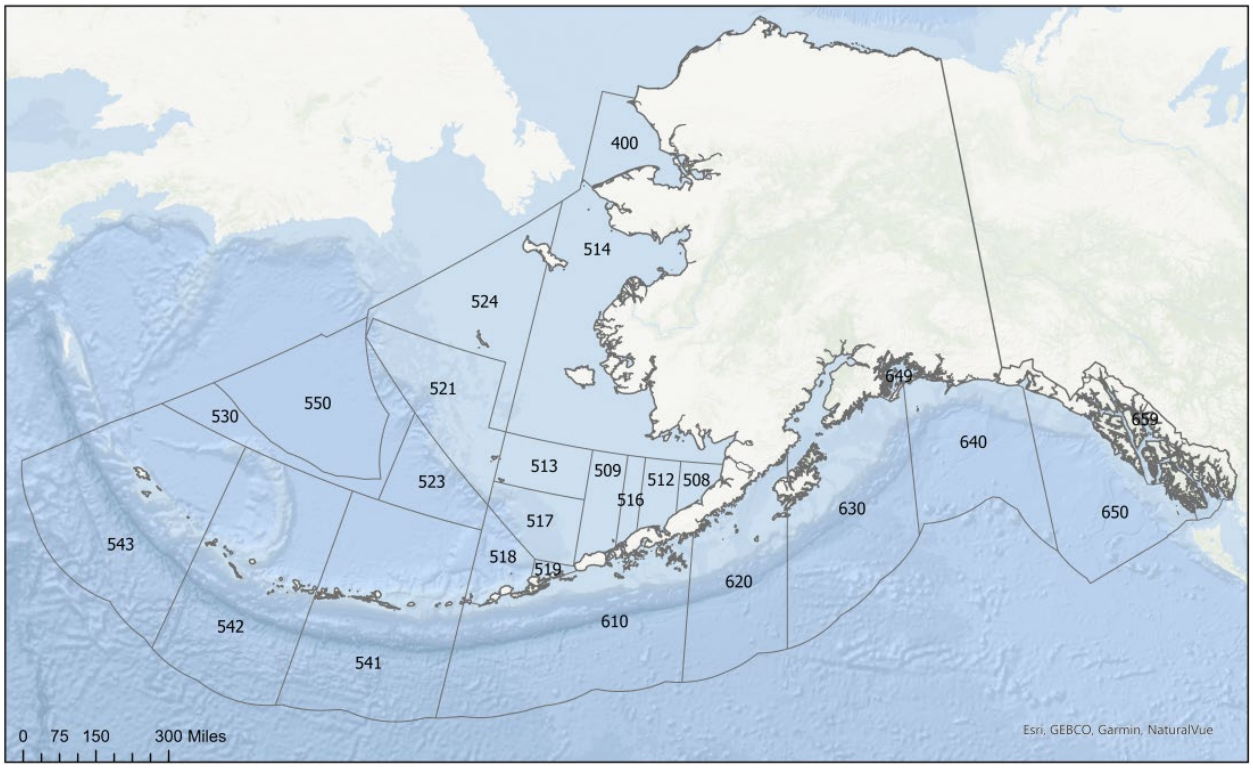

Figure 1-1 NMFS statistical areas associated with the Bering Sea-Aleutian Island and Gulf of Alaska fisheries management areas

2 Description of Alternatives

The Council adopted the following alternatives for analysis in October 2024.

Alternative 1: No Action.

Alternative 2: Revise the definition of pelagic trawl gear to:

> *Option 1. Specify that the limitations on flotation and metallic components are not applicable to the codend.*
>
> *Option 2. Remove outdated text related to parallel line trawls.*
>
> *Option 3. Allow the use of flotation aft of:*
> *Suboption 1: 5.5 inch stretched mesh, or*
> *Suboption 2: 15 inch stretched mesh.*
>
> *Option 4. Allow instruments capable of observing, monitoring, or adjusting the fishing gear, catch, fishing activity, or fishing environment (including seafloor clearance) to be attached to pelagic trawl gear. Floats, capable of providing up to 100 lb (45.3 kg) of buoyancy, may be attached to or within 6 feet of each instrument.*
>
> *Option 5. Allow the use of metallic components in the following locations:*
> *Suboption 1: Forward of the fishing circle.*
> *Suboption 2: Aft of the fishing circle and forward of:*
> *a) 5.5 inch stretched mesh, or*
> *b) 15 inch stretched mesh.*
> *Suboption 3: Aft of:*
> *a) 5.5 inch stretched mesh, or*
> *b) 15 inch stretched mesh.*

In the following sections, the alternatives and options are described in more detail. To aid the reader in understanding the details in this description of alternatives, Section 3.2 provides a description of trawl gear components and Figure 3-1 provides a diagram of general pelagic trawl gear with labeled components.

Alternative 2, Option 1, Option 4, and Option 5 address the use of metallic components. To facilitate analysis, analysts have identified the following types of metallic components commonly attached to pelagic trawl gear: electronic instruments that contain metal (*e.g.,* net-sounder devices, cameras, electronic sensors), connectors (*e.g*., hammerlocks and swivels), and non-electronic components that are made of metal (*e.g*., chains, weights, etc.). Throughout the remainder of this analysis, these three categories will be used to analyze the potential impacts of the different combinations of options. As identified in the Executive Summary, NMFS has specific questions to better regulate the different types of components that contain metal.

2.1 Alternative 1: No Action

Alternative 1, the no action alternative, would maintain the definitions of "pelagic trawl gear", "nonpelagic trawl", and "trawl gear" as they currently exist under the definition of "authorized fishing gear" in § 679.2. The definition of "codend" at § 600.10 would remain unchanged. Vessels participating in the BSAI pollock fishery (§679.24(b)(4)) and/or fishing in areas closed to nonpelagic trawl gear in the BSAI and GOA management areas (as specified at § 679.22) are required to use pelagic trawl gear.

Pelagic trawl gear is defined in paragraph (14) of the definition of "authorized fishing gear" at § 679.2 as a trawl that:

(i) Has no discs, bobbins, or rollers;

(ii) Has no chafe protection gear attached to the footrope or fishing line;

(iii) Except for the small mesh allowed under paragraph (14)(ix) of this definition:

(A) Has no mesh tied to the fishing line, headrope, and breast lines with less than 20 inches (50.8 cm) between knots and has no stretched mesh size of less than 60 inches (152.4 cm) aft from all points on the fishing line, headrope, and breast lines and extending passed the fishing circle for a distance equal to or greater than one half the vessel's Length Overall (LOA); or

(B) Has no parallel lines spaced closer than 64 inches (162.6 cm) from all points on the fishing line, headrope, and breast lines and extending aft to a section of mesh, with no stretched mesh size of less than 60 inches (152.4 cm) extending aft for a distance equal to or greater than one-half the vessel's LOA;

(iv) Has no stretched mesh size less than 15 inches (38.1 cm) aft of the mesh described in paragraph (14)(iii) of this definition for a distance equal to or greater than one-half the vessel's LOA;

(v) Contains no configuration intended to reduce the stretched mesh sizes described in paragraphs (14)(iii) and (iv) of this definition;

(vi) Has no flotation other than floats capable of providing up to 200 lb (90.7 kg) of buoyancy to accommodate the use of a net-sounder device;

(vii) Has no more than one fishing line and one footrope for a total of no more than two weighted lines on the bottom of the trawl between the wing tip and the fishing circle;

(viii) Has no metallic component except for connectors (e.g., hammerlocks or swivels) or a net-sounder device aft of the fishing circle and forward of any mesh greater than 5.5 inches (14.0 cm) stretched measure;

(ix) May have small mesh within 32 ft (9.8 m) of the center of the headrope as needed for attaching instrumentation (e.g., net-sounder device); and

(x) May have weights on the wing tips.

Codend is defined at 50 CFR 600.10 as:

the terminal, closed end of a trawl net[13].

These two regulations, when read in combination, apply the limitations set forth in the pelagic trawl gear definition at § 679.2 to the design components of codends attached to pelagic trawl gear. Until recent years, NMFS AKR did not realize the implications and likely unintended consequence of the national codend definition at § 600.10 when combined with the Alaska Region definition of pelagic trawl gear at §

[13] The Code of Federal Regulations (CFR) is the official legal print publication containing the codification of the general and permanent rules published in the Federal Register by the departments and agencies of the Federal Government. The Electronic Code of Federal Regulations (eCFR) is a continuously updated online version of the CFR. It is not an official legal edition of the CFR. The eCFR is available at https://www.ecfr.gov/.

679.2. Under this alternative, codends attached to pelagic trawl gear would continue to be subject to the limitations specified in the definition of pelagic trawl gear.

Since 1993, NMFS and the Council have supported efforts by industry and researchers at the Alaska Fisheries Science Center (AFSC) to develop a number of gear innovations through cooperative research and the issuance of EFPs to reduce bycatch and negative impacts on benthic habitats, and improve operational efficiency of trawl gear. These efforts and gear improvements often involved modifications to the aft section of the net and conflict with the strict interpretation of the regulations, under which all specified limitations apply throughout pelagic trawl gear, including the codend. Bycatch excluder devices (see Section 3.2.3) have been and continue to be a crucial tool used to reduce salmon bycatch in pelagic trawls. However, current designs of those devices often include flotation and metallic components other than connectors to function properly. The use of both flotation and metallic components is restricted by the current regulatory definition. Flotation is regulated in pelagic trawl gear through paragraph (14)(vi) of the definition of authorized fishing gear at § 679.2, and the use of metallic components is limited by paragraph (14)(viii) of the definition.

These implications for the codend and bycatch excluder devices are important to address, as it has been common industry practice to use metallic components to strengthen codend design while flotation is added to offset the additional weight and provide buoyancy. Common salmon excluder devices used in pelagic trawl gear also require flotation and metallic components to function properly. Removing flotation and metallic components from excluder devices and the codend would create substantial operational challenges and reduce efficiency.

Under Alternative 1, flotation is only allowed in pelagic trawl gear to provide up to 200 lb of buoyancy to accommodate use of a net-sounder device. Flotation is regularly used in pelagic trawl gear codends, with many codends containing a number of floats providing 50-100 lb of buoyancy to support hydrodynamic properties when loaded with catch, as well as support net-sounders, catch sensors, cameras, or other such technologies as needed (NPFMC 2023). Some codends attached to pelagic trawl nets have floats fitted the full length of both sides of the codend, spaced at intervals of 1-3 ft, and providing 1,000 lb of buoyancy or more to compensate for the weight of chain riblines and other metal components, as well as potential catch with burst swim bladders. These codends can be similar to those commonly attached to nonpelagic trawl nets (NPFMC 2023). The common and longstanding practice of using flotation in codends attached to pelagic trawl gear is not compliant with the current definitions of pelagic trawl gear and codend, and therefore would not be considered authorized gear where pelagic trawl gear is required.

Bycatch excluder configurations would continue to be subject to the current pelagic trawl gear definition under Alternative 1. Bycatch excluder devices would be limited from using flotation. As described in Section 3.2.3 of this document, some excluder designs include use of a weighted panel. If the weighted panel contains metallic components other than connectors and is located aft of the fishing circle and forward of 5.5 inch stretched mesh, it would not be compliant with the unchanged definition of pelagic trawl gear.

The current definition states that pelagic trawl gear, “has no metallic component except for connectors (e.g., hammerlocks or swivels) or a net-sounder device aft of the fishing circle and forward of any mesh greater than 5.5 inch (14.0 cm) stretched measure”. In 1993, NMFS’s stated rationale for limiting the use of metallic components on pelagic trawl gear in paragraph (14)(viii) was to prevent reconfigured nonpelagic trawls from complying with the definition of pelagic trawl gear, while remaining capable of being fished as a nonpelagic trawl. NMFS explained that, in early 1992, to meet the prior definition of pelagic trawl gear, fishermen attached parallel lines to nonpelagic trawl fishing lines. This caused the nonpelagic trawl’s fishing lines, which are metal components made of heavy chain or wire rope, to be further back in the belly of a trawl and allowed the trawl to fish as a nonpelagic trawl. This prompted the Council's decision to revise the pelagic trawl definition (58 FR 17196, April 1, 1993). **Based on this rationale, the NMFS AKR SFD interprets this provision as limiting the use of metallic components**

in the middle portion of the net, but allows their use elsewhere on the net – that is, metallic components are allowed in the forward portion of the net (forward of the fishing circle) and the aft portion of the net (aft of 5.5 inch (14.0 cm) stretched mesh). Further, this prohibition on metallic components on the middle of the net contains two exceptions: connectors (e.g., hammerlocks and swivels) and one net-sounder device are allowed between the 5.5 inch (14.0 cm) stretched mesh and the fishing circle. Notably, other portions of the definition of pelagic trawl gear allow weights on the wingtips and two weighted lines forward of the fishing circle: the footrope and fishing line (Section 3.1).

Electronic instruments that contain metallic components are also limited by the current definition of pelagic trawl gear except for a net-sounder. While the definition explicitly allows for the attachment of a net-sounder to pelagic trawl gear, the definition does not explicitly allow the use of any other type of electronic technologies such as cameras, catch sensors, bottom contact sensors or any other instrumentation in the middle of the pelagic trawl net. It is common for vessels using pelagic trawl gear to attach technology such as catch sensors or live feed cameras to the codend or the pelagic trawl net. Multiple catch sensors are often mounted on top of the net along the length of the codend and in the section forward of the codend, indicating filling or catch rate so the vessel operator knows when to haul in the trawl net (C. Rose, personal communication, FishNext Research, Founder and Principal Scientist, November 8, 2024). The use of these technologies is generally understood to be important for vessel operators because they can help the vessel operator identify bycatch that is entering the net or indicate when the codend is full, triggering the captain to make real-time decisions while fishing and in targeting specific species while avoiding others. However beneficial these technologies may be, the regulatory provision is ambiguous in allowing their use in pelagic trawl gear.

In the forward portion of pelagic trawl gear (portion of the net starting at the fishing line and extending aft for a distance equal to or greater than one-half the vessel's length), mesh size and parallel lines are limited in size and must exceed the minimum size or spacing stated in regulation. Paragraph (ix) of the definition of pelagic trawl gear contains an exception to the mesh size limits in the forward portion of the net to allow the use of small mesh to attach a net-sounder device. Use of parallel line trawls, also known as "rope" trawls are allowed under paragraph (iii)(B) of the definition of pelagic trawl gear. Rope trawls are obsolete in North Pacific trawl fisheries. Under Alternative 1, this paragraph would remain.

2.2 Alternative 2: Revise the Definition of Pelagic Trawl Gear

The action alternative, as well as the associated options and suboptions, would be implemented by modifying specific provisions included in the definition of "pelagic trawl gear" under the "authorized fishing gear" regulations at § 679.2. As described in Section 6.5, NMFS recommends the regulations be re-organized such that the definition of pelagic trawl gear at § 679.2 includes language describing the major gear components that are necessary to distinguish pelagic from nonpelagic gear as well as additional detail on specific configuration requirements and applicable restrictions in regulations at § 679.24 which contains gear limitations. This alternative includes five options. For each option, the Council may recommend specific regulatory changes as necessary and as described below.

Additional flotation is allowed under Options 1, 3, and 4. The current regulatory language allows for floats capable of providing up to 200 lb (90.7 kg) of buoyancy to accommodate the use of a net-sounder device. The Council should clarify whether it intends for the 100 lb buoyancy limit would apply to net sounders, or if the current regulatory limit of 200 lb of buoyancy for one net sounder would be retained. Although Option 4 would impose a 100lb flotation limit on instruments, which could include net sounders, reducing the flotation limit for net sounders from 200 lb (under the regulatory status quo) to 100 lb (under Option 4) would impose additional regulatory restrictions and may not reflect current gear configurations.

Under Alternative 2, the definition of nonpelagic trawl would not be changed in regulation. However, any change to the definition of pelagic trawl gear could impact the meaning of the definition of nonpelagic

trawls. Nonpelagic trawl would continue to be defined as a trawl other than a pelagic trawl. Because nonpelagic trawl has a broader definition when compared to pelagic trawl gear, nonpelagic trawls are not subject to the same design limitations applicable to pelagic trawl gear. This allows any variation of codend, metallic components, and bycatch excluder devices to be used on nonpelagic trawls.

Additionally, the definition of "trawl gear" at § 679.2 and the definition of "codend" at 50 CFR 600.10 would remain unchanged.

2.2.1 Option 1: Allow flotation and metallic components in the codend

Alternative 2, Option 1 would allow flotation and metallic components in a codend attached to pelagic trawl gear. Under this option, flotation and metallic components in codends attached to pelagic trawl gear would not be limited by the definition of pelagic trawl gear under "authorized fishing gear" in § 679.2. The limitations set out in the definition of pelagic trawl gear would continue to apply to the portion of the trawl net forward of the codend. This would allow common codend designs to comply with the definition of pelagic trawl gear, including flotation, and metallic components such as chain riblines, electronic instruments, and connectors.

Commonly used codend components such as flotation, metallic components, and catch sensors are crucial for the effective operations of pelagic trawl gear. Limiting codend design does not serve an obvious conservation purpose or gear performance purpose. The codend collects fish caught in the trawl net into a small space to be retrieved by the vessel. For optimal performance, the vessel operator aims to operate the net in such a way so that the codend is positioned in a central location in the water column behind the fishing circle. If the codend twists or the flow of fish into the codend is otherwise cut off then fish may not enter the codend and could pile up in other portions of the net or escape through larger meshes located forward of the codend. This would create inefficient fishing conditions. The Council and NMFS have previously considered implementing regulations that would limit the mesh size used in codends for the purpose of reducing bycatch, however those regulations were not implemented.[14] The codend components that are limited by the current definition (*e.g.*, flotation and metallic components) do not affect which fish are caught in the net and only serve the purpose of maintaining neutral buoyancy while the net is fishing and delivering catch to the surface. If selected, this option would be consistent with current Council and NMFS management goals for the groundfish fisheries off Alaska.

2.2.2 Option 2: Remove outdated text related to parallel line trawls

Alternative 2, Option 2 would remove outdated text related to parallel line trawls.

Under Alternative 2, Option 2, regulatory text within the pelagic trawl gear definition under "authorized fishing gear" in § 679.2 would be modified to remove restrictions related to parallel line trawls, also known as "rope trawls". Rope trawls are an obsolete variation of pelagic trawl gear in North Pacific groundfish fisheries. As such, paragraph (iii)(B) of the pelagic trawl gear definition would be removed and additional edits may be necessary to remove any other references to rope trawls or relevant language. This option would not conflict with NMFS management goals for the groundfish fisheries off Alaska.

In the event this gear type resurfaces in the future, parallel line trawls would still be regulated by applicable limitations included in subsequent paragraphs of the pelagic trawl gear definition.

[14] At its September 1994 meeting, the Council recommended that NMFS establish, by regulation, minimum mesh size and design standards for codend top quarter panes in specific fisheries. In the December 1994 B3 NMFS management report, NMFS informed the Council of the challenges encountered with drafting enforceable mesh size limits and notified the Council that mesh size limits were unnecessary given the passage of improved retention/improved utilization program that remains in place today. December 1994 meeting documents are available at: https://meetings.npfmc.org/Meeting/Details/2378.

2.2.3 Option 3: Allow flotation

Alternative 2, Option 3 would allow the use of flotation in pelagic trawl gear aft of:

Suboption 1: 5.5 inch stretched mesh, or

Suboption 2: 15 inch stretched mesh.

Codends attached to pelagic trawls are typically constructed using mesh less than 5.5 inches stretched measure. Chinook salmon excluder devices are generally located aft of 5.5 inch stretched mesh, but not always. Alternative 2, Option 3 would allow flotation to be used in specified aft portions of pelagic trawl gear: either aft of 5.5 inch stretched mesh or 15 inch stretched mesh. Neither of the suboptions would limit the amount of flotation (in terms of lb of buoyancy) that could be attached to the aft portion of the net as delineated by the mesh sizes stated in each suboption.

As mentioned under Alternative 2, Option 1, flotation is commonly used in codends attached to pelagic trawl gear. Pelagic trawl gear codends commonly use 4 inch stretched mesh, thus Option 3 would definitively allow flotation in codends attached to pelagic trawl gear and would allow flotation in bycatch excluder devices located in the aft section of the net immediately forward of the codend. Current regulations limiting flotation may be contrary to conservation goals of reducing bycatch to the extent practicable, as flotation is often necessary to the design and proper function of bycatch excluder devices. Salmon excluder devices have been developed and tested through the EFP process with excluder designs evolving over time as innovations occur. Flotation can be important to the form, function and continued improvement of bycatch excluders to reduce bycatch in support of sustainable fisheries (See Section 3.2.3). Although salmon excluder devices are generally located aft of 5.5 inch stretched mesh, vessel operators often experiment with the location and mesh size of salmon excluder devices, and associated components may not always be located aft of 5.5 inch stretched mesh in pelagic trawl gear. As such, this option includes two suboptions to allow the Council to specify where flotation is permissible in the aft sections of pelagic trawl gear.

Suboption 1 would allow flotation aft of 5.5 inch stretched mesh and uses similar language to paragraph (viii) of the pelagic trawl gear definition. Under this suboption, flotation would still be prohibited forward of 5.5 inch mesh in pelagic trawl gear.

Suboption 2 would allow flotation in a larger portion of the net aft of 15 inch stretched mesh as specified in paragraph (iv) of the pelagic trawl gear definition. This would definitively permit flotation in codends attached to pelagic trawl gear and would allow flotation in bycatch excluder devices in the net aft of 15 inch stretched mesh.

Alternative 2, Option 3 only pertains to flotation. Metallic components, including electronic instruments, would continue to be limited in aft portions of the net and codend as specified in the current definition of pelagic trawl gear unless the Council recommends allowing for expanded use under Option 4 or Option 5. Codends and bycatch excluder devices commonly contain metallic components other than connectors such as weighted panels, lights, and live feed cameras.

Inshore cooperatives, Western Alaska Community Development Quota Program (CDQ) groups, AFA catcher processor entities and entities representing the AFA mothership sector participate in salmon bycatch incentive plan agreements (IPAs) within the BS pollock fishery (§ 679.21(f)(12)) with requirements of utilizing salmon excluder devices, with recognition of contingencies. However, pelagic trawl gear as defined under “authorized fishing gear” in § 679.2 does not presently specify exemptions for bycatch excluder devices. This option would be in line with current industry efforts and longstanding management goals of reducing prohibited species bycatch in trawl fisheries. Additionally, because nonpelagic trawl is defined as a trawl other than a pelagic trawl, this means that bycatch excluder devices used in nonpelagic trawls are not limited in their design.

2.2.4 Option 4: Allow instruments

Alternative 2, Option 4 would allow instruments capable of observing, monitoring, or adjusting the fishing gear, catch, fishing activity, or fishing environment (including seafloor clearance) to be attached to pelagic trawl gear. Floats, capable of providing up to 100 lb (45.3 kg) of buoyancy, may be attached to or within 6 feet of each instrument.

As described in Section 2.1 above, various commonly used electronic instruments contain metal components. Electronic instrumentation in trawl gear has become a necessary component of modern fishing fleets with uses, ranging from increasing efficiency to decreasing bycatch of non-target species. One common instrument used in trawl gear are catch sensors. Catch sensors are deployed within and just forward of the codend to notify vessel operators when and at what rate the codend fills with catch. Net sounders and transducers are used to determine if and how the trawl net is fishing and at what rate schooling fish are entering the net. Bottom contact sensors are also available on the market to notify captains if the net is fishing on the bottom. Live feed cameras and lights are often used in salmon excluder devices.

As written, the variety of instruments that would be allowed and the purpose of those instruments is ambiguous. Analysts interpret Alternative 2, Option 4, to mean that instruments capable of the following would be allowed to be connected to pelagic trawl gear:

- observing or monitoring the fishing gear, catch, fishing activity, or fishing environment; or
- adjusting the fishing gear, catch, fishing activity, or fishing environment.

Monitoring and observing instruments that are commonly used in pelagic trawl gear include cameras, catch sensors, flow sensors, bottom contact sensors, net-sounders, and sonars. These are commonly used now, and would continue to be allowed under Option 4. This option could also allow any new instruments, sensors, or monitoring devices that are developed in the future to be attached to the net without need for immediate regulatory changes. The data that would be provided by use of these observing and monitoring technologies are presumably helpful to the vessel operator in making real-time decisions while actively fishing, in targeting specific species and avoiding others. However useful these technologies may be, with the current regulatory definition that limits allowable metallic components to connectors and one net-sounder device in the middle portion of the net, these electronic instruments, which contain metal, would be limited by the existing regulations.

This option would also allow the use of instruments that can adjust the fishing gear, catch, fishing activity, or fishing environment. The primary type of instrument analysts have identified that could adjust the fishing gear, catch, or fishing activity are bycatch excluder devices.[15] One example of an instrument used to adjust fishing gear is the active excluder device described by Dr. Craig Rose in his written public testimony submitted in October 2024. In his written comment letter, he cited the scientific research paper (Rose & Barbee, 2022) which describes panel-moving devices and associated rigging used to manually manipulate a panel installed in the intermediate portion of the net (located in the small mesh section

[15] Bycatch excluder devices are commonly understood to be any instrument or modifications to trawl gear that allows non-target species to escape the net (e.g., salmon or halibut bycatch excluders). The Council intentionally did not define bycatch excluder devices in their past action in Amendment 110, which implemented requirements for IPAs to include provisions to require use of salmon excluder devices. At the time, the Council determined that defining these devices by describing a certain excluder design could stifle innovation by prohibiting experimentation that might lead to the development of new and better excluders. The absence of a definition allows any component of pelagic trawl gear that allows non-target species to escape the net to be considered a bycatch excluder device. These components include the large mesh panels that are required in the forward portion of the net aft of the fishing circle.

forward of the codend). This device, along with monitoring instruments allow the vessel operator to, in real time, adjust the fishing gear to open a flap that allows salmon to escape the net.

However, "instruments that adjust the fishing gear, catch, fishing activity, or fishing environment" is a broad category that could be interpreted in many ways. Although the primary type of instruments analysts have identified that could adjust the fishing gear are bycatch excluder devices[16], it is possible that many other types of instruments could also be classified and included under this category. These instruments could then be used for other purposes in addition to bycatch reduction, the scope of which is unknown. Option 4 would allow this broad category of "adjusting" instruments to be attached to pelagic trawl gear in addition to bycatch reduction instruments. **If the Council intends to allow instruments that adjust the catch, fishing activity, or fishing environment, it would be helpful for the Council to clarify what those types of instruments might be.** NMFS would need additional information about how to judge which instruments are meeting those goals.

If we look to the current definition of pelagic trawl gear for guidance, metallic components that weigh down the trawl net could also be considered instruments that adjust the fishing gear. As specified in the rulemaking documents, the Council has taken action to limit this type of adjustment in the past; the current definition limits weighted metallic components to prevent adjustments that allow the net to operate like a nonpelagic trawl. If there are specific adjustments or instruments that serve a purpose the Council does not wish to allow, the Council may wish to provide further clarification or specification on which adjustments or instruments are allowed, and/or which are prohibited. As two examples, the Council could specify specific types of adjustments they would want to prohibit (e.g. instruments that adjust a pelagic trawl to be fished closer to the seafloor) or the types of adjustments that the Council would want to allow (e.g. instruments that adjust or manipulate bycatch excluder devices).

Analysts have assumed that the Council intends to at least allow adjustment of bycatch excluder devices. However, additional information is necessary to inform the form and function of instruments that might be used to adjust the fishing gear for other purposes to fully analyze the potential impacts of this particular piece of Option 4. See Section 4.2.4 for additional discussion about instruments capable of adjusting the fishing gear, catch, fishing activity, or fishing environment.

This option also allows flotation with up to 100 lb (45.4 kg) of buoyancy to be attached within six feet of the instrumentation to provide neutral buoyancy. As opposed to Option 3-which would allow flotation only in the aft portion of pelagic trawl gear and codends-Option 4 would allow flotation anywhere on pelagic trawl gear as long as it is within six feet of instrumentation and provides no more than 100 lb of buoyancy. If Option 3 and Option 4 are selected as part of the preferred alternative, then flotation would be allowed in the aft portion of the net (Option 3) and within 6 feet of an instrument attached anywhere on pelagic trawl gear (Option 4). Neither Option 3 or Option 4 would limit the amount of flotation (in terms of lb of buoyancy) that could be attached to the net.

The current regulatory language allows for floats capable of providing up to 200 lb (90.7 kg) of buoyancy to accommodate the use of a net-sounder device, and analysts assume this language would remain unchanged unless the Council specifies otherwise. If the Council intends for net sounders to be considered under the umbrella of instruments and have a 100lb buoyancy limit, rather than retaining the current regulatory restriction of 200lb buoyancy, then that should be clarified.

[16] As far as we know, all salmon bycatch excluder devices using components that adjust the device are deployed aft of 15 inch stretched mesh in pelagic trawl gear. If the intent of including the term "adjusting" is to explicitly allow the use of these devices, then this term may not be necessary if Option 5, Suboption 3(b) is selected to allow metallic components aft of 15 inch stretched mesh.

2.2.5 Option 5: Allow the use of metallic components

Option 5 would allow the use of metallic components in pelagic trawl gear with location dependent on each specific suboption.

Suboption 1: Forward of the fishing circle
Suboption 2: Aft of the fishing circle and forward of:
a) 5.5 inch stretched mesh, or
b) 15 inch stretched mesh.
Suboption 3: Aft of:
a) 5.5 inch stretched mesh, or
b) 15 inch stretched mesh

Alternative 2, Option 5 focuses on clarifying the use and location of metallic components in pelagic trawl gear. As described above, use of various types of metallic components are addressed in Alternative 2, Options 1, 4, and 5. Option 4 considers allowing use of electronic instruments anywhere on a pelagic trawl net. In contrast, Option 5 identifies specific areas of the net where metallic components would be allowed. The impacts of allowing the three different categories of metallic components are analyzed separately for each portion of the net identified. If Option 5 is selected as the preferred alternative, NMFS recommends the Council specify which types of metallic components should be allowed in each area of the net. Commonly used metal components include chain riblines in codends attached to pelagic trawl gear, net-sounders, connectors, and sensors such as catch sensors aft of 5.5 inch stretched mesh. **Assuming the Council intends for instruments to be considered metallic components under Option 5, and that Option 4 is selected as part of the preferred alternative, then the Council should select suboptions to identify the location(s) where instruments would be allowed. The Council could also opt to choose to use a term other than metallic components in order to delineate different restrictions for different types of components, or clarify that instruments should not be considered metallic components under Option 5.**

Metallic components are currently addressed in subparagraph (viii) of the pelagic trawl gear definition. As written, this paragraph is open to various interpretations as to where metallic components can be located in pelagic trawl nets. However, SFD's interpretation of the current definition is that it allows any metallic components to be used forward of the fishing circle and aft of 5.5 in stretched mesh. In the middle portion of the net (between the fishing circle and 5.5 in stretched mesh), metallic components, other than connectors and one net-sounder device, are prohibited. Selecting suboptions within Alternative 2, Option 5 would resolve ambiguity in the current definition by clearly stating which types of metallic components are allowed in pelagic trawl gear in each portion of the net: 1) forward of the fishing circle, 2) aft of the fishing circle and forward of either 5.5 or 15 inch stretched mesh, and 3) aft of 5.5 or 15 inch stretched mesh. The suboptions may be selected individually or in any combination for each of types of metallic components analyzed, and are not mutually exclusive.

Suboption 1 would allow metallic components forward of the fishing circle. This is consistent with SFD's interpretation of the regulatory status quo. If Suboption 1 is selected, only one fishing line and one footrope would continue to be allowed, per paragraph (14)(vii) of the definition of "Authorized Fishing Gear," for a total of no more than two weighted lines on the bottom of the trawl between the wing tip and the fishing circle. Weights would also still be permitted on the wingtips per paragraph (14)(x) of the definition of "Authorized Fishing Gear".

Suboption 2 would allow metallic components to be used in pelagic trawl gear aft of the fishing circle and forward of either 2(a) 5.5 inch stretched mesh or 2(b) 15 inch stretched mesh. Currently, the only metal components allowed in the portion of the net aft of the fishing circle and forward of 5.5 inch stretched mesh are connectors and a net sounder. If selected, Suboption 2 could allow more than connectors and a

net-sounder device in the middle portion of the net, unless the Council specifies which types of metallic components it wants to allow in this portion of the net. The current restriction on using metallic components in the middle portion of the net is intended to prevent the type of configurations that mimic bottom trawling. If the Council were to recommend allowing metallic components other than connectors or electronic instruments in this portion of the net, that would represent a change in permissible configurations from the regulatory and operational status quo depending on how the Council wishes to define metallic components, which could create new impacts on the environment. Additional analysis of the potential impacts of this are discussed further in Chapter 4 and Chapter 5.

Suboption 3 would allow any metallic components aft of either 3(a) 5.5 inch stretched mesh or 3(b) 15 inch stretched mesh. Allowing metallic components aft of 5.5 inch stretched mesh would generally include the codend and be consistent with SFD's interpretation of the regulatory status quo. Common metallic components in the codend can include chain riblines as well as connectors such as hammerlocks or swivels. This could also include metallic components in bycatch excluder devices if located aft of 5.5 inch stretched mesh. Allowing metallic components aft of 15 inch stretched mesh would include all sections of the net aft of the mesh section specified in paragraph (iv) of the pelagic trawl gear definition, and would include a portion of the last tapered section, intermediate or packing tube, attached codend, and all current variations of bycatch excluder devices.

2.3 Summary of the Alternatives

See Table 2-1 for a summary of the alternatives.

Table 2-1 Summary of Alternatives and Options

Alternative	Description
Alt 1: No Action	Regulations remain unchanged. Commonly used gear configurations and components would continue to be non-compliant with the definition of pelagic trawl gear, resulting in potential enforcement action for the use of: ● flotation attached to the codend ● use of metallic components that are located aft of the fishing circle and forward of any mesh greater than 5.5 inches stretched measure (except for metallic components that are connectors (e.g., hammerlocks or swivels) and one net-sounder) ● use of technology, other than a net-sounder device that comports with paragraph (viii) of the definition of "pelagic trawl gear"
Alt 2: Option 1: Allow flotation and metallic components in the codend	Regulations would be modified to explicitly allow flotation and metallic components in codends attached to pelagic trawl gear. ● Metallic components and flotation could be used freely in codend design. ● Metallic components, including connectors, would continue to be limited in the portion of the net aft of the fishing circle and forward of mesh measuring 5.5 inches as specified in the current definition of pelagic trawl gear.
Alt 2: Option 2: Remove parallel line trawls	Paragraph (14)(iii)(B) of the definition of "authorized fishing gear" at § 679.2 would be modified to remove gear restrictions related to parallel line trawls as a variation of pelagic trawl gear.
Alt 2: Option 3: Allow flotation aft of: Suboption 1) 5.5 inch stretched mesh, or Suboption 2) 15 inch stretched mesh	● Use of flotation would continue to be limited in the forward and middle portions of the net that are forward of [5.5 inch or 15 inch] stretched mesh. ● Selecting either [5.5 inch or 15 inch] stretched mesh would encompass all flotation used in the codend. ● Selecting 15 inch stretched mesh would encompass all areas of the net where flotation is known to be used in bycatch excluder devices
Alt 2: Option 4: Allow instrumentation	Regulations would be modified to allow instrumentation capable of observing, monitoring, or adjusting the fishing gear, catch, fishing activity, or fishing environment (including seafloor clearance) to be attached to pelagic trawl nets, as well as floats to support them (up to 100 lb of buoyancy). ● Use of commonly used instrumentation such as catch sensors and net transducers would be allowed anywhere in pelagic trawl nets. ● The Council should clarify if a net-sounder is included as an instrument and is therefore subject to the 100lb buoyancy limit, or if the current 200lb buoyancy limit for one net sounder should continue to apply.
Alt 2: Option 5: Allow the use of metallic components: Suboption 1: Forward of the fishing circle Suboption 2: Aft of the fishing circle & forward of: a) 5.5 inch stretched mesh b) 15 inch stretched mesh Suboption 3: Aft of: a) 5.5 inch stretched mesh b) 15 inch stretched mesh	Regulations would be modified to clarify where metallic components are allowed in areas of the net: forward of the fishing circle and/or aft of the fishing circle and forward of [5.5 inch or 15 inch] stretched mesh and/or aft of [5.5 inch or 15 inch] stretched mesh. ● The Council should specify what types of metallic components (or what types of gear modifications) they would specifically like to limit in each portion of the net, including: 1. electronic instruments that contain metal (e.g. net-sounder devices, cameras, electronic sensors), 2. connectors (e.g., hammerlocks and swivels), and 3. non-electronic metallic components (e.g., chains, weights, weighted panels) ● Suboptions 1 and 3 are consistent with the locations where non-electronic metallic components are currently allowed and used ● Suboption 2 would broadly expand the allowed use of non-electronic metallic components in the middle portion of the net. ● Selecting either [5.5 inch or 15 inch] stretched mesh would encompass all metallic components used in the codend. ● Selecting 15 inch stretched mesh would encompass all areas of the net where metallic components are known to be used in bycatch excluder devices.

3 Description of Definitions, Gear Type, Fisheries, and Associated Area Closures

This section describes the definitions of pelagic trawl gear and the parts of the pelagic trawl currently in use. Trawl gear descriptions and associated fleet profiles are discussed in relation to the BSAI and GOA management areas. Nonpelagic trawl gear is also described, as it is the direct inverse of pelagic trawl gear. Bycatch excluder device development, configurations and components are further discussed in section 3.2.3. This section also describes the directly regulated fisheries that would be impacted by the management alternatives. The BS pollock fishery is the only fishery in which pelagic trawl gear is required to be used in regulations. Vessels targeting Pacific ocean perch (POP) in the BS and GOA are included as well as vessels targeting pollock in the GOA, as they use pelagic trawl gear when targeting these species in certain areas that are closed to directed fishing with nonpelagic trawl gear. However, these fleets are not required by regulation to use pelagic trawl gear except when fishing within certain static closure areas such as Type I and Type II closures in the GOA or the Red King Crab Savings Area in the BS. As such, habitat closure zones and gear limitations are discussed in this section. Related pelagic trawl gear definitions in adjacent jurisdictions are also included for reference.

The purpose of these descriptions is to establish a regulatory baseline and allow analysis of the action alternatives against those baseline conditions. The effects of this action will be discussed qualitatively in terms of how the action is expected to alter fleet behavior in subsequent sections.

3.1 Relevant Regulatory Gear Definitions

In addition to the trawl gear components described in Table 3-1, the following definitions are discussed throughout this analysis and provided here for reference.

50 CFR 600.10

* * * * *

Codend means the terminal, closed end of a trawl net.

* * * * *

Trawl means a cone or funnel-shaped net that is towed through the water, and can include a pair trawl that is towed simultaneously by two boats.

* * * * *

50 CFR 679.2

Authorized fishing gear (see also § 679.24 for gear limitations and Table 15 to this part for gear codes) means trawl gear, fixed gear, longline gear, pot gear, and nontrawl gear as follows:

(1) ***Bottom contact gear*** means nonpelagic trawl, dredge, dinglebar, pot, or hook-and-line gear.

(2) ***Dinglebar gear*** means one or more lines retrieved and set with a troll gurdy or hand troll gurdy, with a terminally attached weight from which one or more leaders with one or more lures or baited hooks are pulled through the water while a vessel is making way.

(3) ***Dredge*** means a dredge-like device designed specifically for and capable of taking scallops by being towed along the ocean floor.

(4) ***Fixed gear*** means:

(i) For sablefish harvested from any GOA reporting area, all longline gear, longline pot gear, and, for purposes of determining initial IFQ allocation, all pot gear used to make a legal landing.

(ii) For sablefish harvested from any BSAI reporting area, all hook-and-line gear, jig gear, and all pot gear.

(iii) For halibut harvested from any IFQ regulatory area, all fishing gear composed of lines with hooks attached, including one or more stationary, buoyed, and anchored lines with hooks attached.

(iv) For halibut harvested from any GOA reporting area, all longline pot gear, if the vessel operator is fishing for IFQ sablefish in accordance with § 679.42(l).

(v) For halibut harvested from any IFQ regulatory area in the BSAI, all pot gear, if the vessel operator is fishing for IFQ or CDQ halibut in accordance with § 679.42.

(5) ***Hand troll gear*** means one or more lines, with lures or hooks attached, drawn through the water behind a moving vessel, and retrieved by hand or hand-cranked reels or gurdies and not by any electrically, hydraulically, or mechanically powered device or attachment.

(6) ***Handline gear*** means a hand-held line, with one or more hooks attached, that may only be operated manually.

(7) ***Hook-and-line gear*** means a stationary, buoyed, and anchored line with hooks attached, or the taking of fish by means of such a device.

(8) ***Jig gear*** means a single, non-buoyed, non-anchored line with hooks attached, or the taking of fish by means of such a device.

(9) ***Longline gear*** means hook-and-line, jig, troll, and handline or the taking of fish by means of such a device.

(10) ***Longline pot*** means a stationary, buoyed, and anchored line with two or more pots attached, or the taking of fish by means of such a device.

(11) ***Mobile bottom contact gear*** means nonpelagic trawl, dredge, or dinglebar gear.

(12) ***Nonpelagic trawl*** means a trawl other than a pelagic trawl.

(13) ***Nontrawl gear*** means pot and longline gear.

(14) ***Pelagic trawl gear*** means a trawl that:

(i) Has no discs, bobbins, or rollers;

(ii) Has no chafe protection gear attached to the footrope or fishing line;

(iii) Except for the small mesh allowed under paragraph (14)(ix) of this definition:

(A) Has no mesh tied to the fishing line, headrope, and breast lines with less than 20 inches (50.8 cm) between knots and has no stretched mesh size of less than 60 inches (152.4 cm) aft from all points on the fishing line, headrope, and breast lines and extending passed the fishing circle for a distance equal to or greater than one half the vessel's LOA; or

(B) Has no parallel lines spaced closer than 64 inches (162.6 cm) from all points on the fishing line, headrope, and breast lines and extending aft to a section of mesh, with no stretched mesh

size of less than 60 inches (152.4 cm) extending aft for a distance equal to or greater than one-half the vessel's LOA;

(iv) Has no stretched mesh size less than 15 inches (38.1 cm) aft of the mesh described in paragraph (14)(iii) of this definition for a distance equal to or greater than one-half the vessel's LOA;

(v) Contains no configuration intended to reduce the stretched mesh sizes described in paragraphs (14)(iii) and (iv) of this definition;

(vi) Has no flotation other than floats capable of providing up to 200 lb (90.7 kg) of buoyancy to accommodate the use of a net-sounder device;

(vii) Has no more than one fishing line and one footrope for a total of no more than two weighted lines on the bottom of the trawl between the wing tip and the fishing circle;

(viii) Has no metallic component except for connectors (e.g., hammerlocks or swivels) or a net-sounder device aft of the fishing circle and forward of any mesh greater than 5.5 inches (14.0 cm) stretched measure;

(ix) May have small mesh within 32 ft (9.8 m) of the center of the headrope as needed for attaching instrumentation (e.g., net-sounder device); and

(x) May have weights on the wing tips.

(15) ***Pot gear*** means a portable structure, rigid or collapsible, that is designed and constructed to capture and retain fish alive in the water. This gear type includes longline pot and pot-and-line gear. Each groundfish pot must comply with the following:

(i) ***Biodegradable panel.*** Each pot used to fish for groundfish must be equipped with a biodegradable panel at least 18 inches (45.72 cm) in length that is parallel to, and within 6 inches (15.24 cm) of, the bottom of the pot, and that is sewn up with untreated cotton thread of no larger size than No. 30.

(A) ***Collapsible pot exception.*** A collapsible pot (*e.g.,* slinky pot) used to fish for halibut IFQ or CDQ, or sablefish IFQ or CDQ, in accordance with paragraph (4) of this definition, or used to directed fish for Greenland turbot in the BS subarea of the BSAI, is exempt from the biodegradable panel placement requirements described in paragraph (15)(i) of this definition. Instead, a collapsible pot must have either a biodegradable panel placed anywhere on the mesh of the collapsible pot, which is at least 18 inches (45.72 cm) in length and is made from untreated cotton thread of no larger size than No. 30, or one door on the pot must measure at least 18 inches (45.72 cm) in diameter and be wrapped with untreated cotton thread of no larger size than No. 30.

(B) [Reserved]

(ii) ***Tunnel opening.*** Each pot used to fish for groundfish must be equipped with rigid tunnel openings that are no wider than 9 inches (22.86 cm) and no higher than 9 inches (22.86 cm), or soft tunnel openings with dimensions that are no wider than 9 inches (22.86 cm).

(A) ***Halibut retention exception.*** If halibut retention is required when harvesting halibut from any IFQ regulatory area in the BSAI or GOA, the requirements to comply with a tunnel opening for

pots when fishing for IFQ or CDQ halibut or IFQ or CDQ sablefish in the BSAI in accordance with § 679.42(m), or for IFQ sablefish in the GOA in accordance with § 679.42(l), do not apply.

(B) ***Greenland turbot exception.*** If directed fishing for Greenland turbot in the BS subarea of the BSAI with longline pots, the tunnel opening requirement under paragraph 15(ii) of this definition does not apply.

(16) ***Pot-and-line gear*** means a stationary, buoyed line with a single pot attached, or the taking of fish by means of such a device.

(17) ***Power troll gear*** means one or more lines, with hooks or lures attached, drawn through the water behind a moving vessel, and originating from a power gurdy or power-driven spool fastened to the vessel, the extension or retraction of which is directly to the gurdy or spool.

(18) ***Trawl gear*** means a cone or funnel-shaped net that is towed through the water by one or more vessels. For purposes of this part, this definition includes, but is not limited to, beam trawls (trawl with a fixed net opening utilizing a wood or metal beam), otter trawls (trawl with a net opening controlled by devices commonly called otter doors), and pair trawls (trawl dragged between two vessels) and is further described as pelagic or nonpelagic trawl.

(19) ***Troll gear*** means one or more lines with hooks or lures attached drawn through the water behind a moving vessel. This gear type includes hand troll and power troll gear and dinglebar gear.

(20) ***Snap gear*** means a type of hook-and-line gear where the hook and gangion are attached to the groundline using a mechanical fastener or snap.

3.2 Trawl Gear Descriptions

Trawl gear used in Alaskan fisheries are categorized as either pelagic trawl gear or nonpelagic trawl gear (Section 3.1). Although trawls are required to meet specifications in either of these two categories, there can be varying degrees of design variations within nonpelagic and pelagic trawls.

3.2.1 Pelagic Trawl Gear

Pelagic trawl gear is defined in paragraph (14) of the definition of authorized fishing gear in § 679.2 and is used by vessels participating in the pollock fisheries in the BSAI and GOA as well as trawl rockfish fisheries, primarily POP, in the GOA. The BS pollock fishery is managed under the American Fisheries Act (AFA) management program and the trawl rockfish fisheries in the GOA are managed under the Central GOA Rockfish Program (Rockfish Program). An up-to-date catalog of current pelagic trawl gear specifications or variations for vessels fishing Alaskan waters does not exist. Some data could be provided from an ongoing collaborative research effort between Alaska Pacific University (APU) and the Alaskan pollock fleet to catalog gear specifications, develop models estimating pelagic trawl/seabed interactions, and develop a field study design to measure seabed contact and clearance of pelagic trawl gear under real fishing conditions (Harris et al. in prep, see Section 1.3.1). Two EFPs have also been issued for pelagic trawl gear research testing in the past two years: an innovative chum salmon excluder device, as well as a modified footrope design (see Section 1.3.1). In lieu of published results from the gear cataloging project and results from ongoing EFP research, known gear descriptions from the 2012 Fishing Fleet Profiles report (NPFMC 2012) are useful to understand variations within pelagic trawl gear.

For context, select trawl gear components and associated descriptions are listed in Table 1-1 and labeled in Figure 3-1. These descriptions, derived from 50 CFR Part 600, Part 660, Part 679 and staff

interpretations based on discussions with industry participants, could be useful in beginning to develop a shared understanding and vocabulary for these common trawl components.

Table 3-1 Trawl gear components and descriptions organized from forward to aft (front to back) of a trawl.

Term	Generalized Description
Warp	A line (usually cable) passing through a vessel's block used in towing a trawl net.
Trawl Doors (Otter Doors)	Large hydrodynamic metal plates used to spread the net horizontally, pull the net downward, and keep the trawl mouth open. Positioned between the warp and the bridles.
Sweeps (sweep lines)	Generally used on bottom trawls; lengths of wire between the bridle and trawl doors used to sweep along the ocean bottom and herd fish into the net.
Bridle	A section of cable between trawl door and net; for pelagic trawl gear, cables attached from the door to the trawl wingtips / clump weights.
Clump Weights	Weights attached to trawl wingtips, usually clumps of heavy anchor chain.
Set Back Chain	A short length of chain connecting the bridle and clump weight to the bottom trawl wing, used to adjust and align the trawl "mouth".
Wing tip	The point where adjacent breast lines intersect or where a breast line intersects with the fishing line. (§ 679.2)
Wing	The portions of the net extending forward laterally from the fishing circle.
Footrope	A chain, rope, or wire attached to the bottom front end of the trawl webbing forming the leading edge of the bottom panel of the trawl net, and attached to the fishing line. (§ 679.2)
Trawl Fishing Line	A length of chain, rope, or wire rope in the bottom front end of a trawl net to which the webbing or lead ropes are attached. (§ 679.2)
Headrope	A rope bordering the top front end of a trawl. (§ 679.2)
Breastline	A rope or wire running along the forward edges of the side panels of a net, or along the forward edge of the side rope in a rope trawl. (§ 679.2) A rope or cable that connects the end of the headrope and the end of the trawl fishing line along the edge of the trawl web closest to the towing point. (50 CFR 660.11)
Vertical Net Opening	The headrope to footrope vertical distance rise, highest point of the net to the lowest point of the net while fishing; generally at the fishing circle.
Fishing Circle	The circumference of a trawl intersecting the center point on a fishing line, and that is perpendicular to the long axis of a trawl. (§ 679.2)
Net-Sounder Device	A sensor used to determine the depth from the water surface at which a fishing net is operating. (§ 679.2)
Body	The main portion of the net, not including wings, codend, or intermediate.

Term	Generalized Description
Selvedge Line	A line running horizontally along the net where mesh panel sections are stitched together.
Ribline	A heavy rope or line that runs down the sides, top, or underside of a trawl net from the mouth of the net to the terminal end of the codend to strengthen the net during fishing. (50 CFR 660.11)
Trawl Gear	A cone or funnel-shaped net that is towed through the water by one or more vessels. For purposes of this part, this definition includes, but is not limited to, beam trawls (trawl with a fixed net opening utilizing a wood or metal beam), otter trawls (trawl with a net opening controlled by devices commonly called otter doors), and pair trawls (trawl dragged between two vessels) and is further described as pelagic or nonpelagic trawl. (§ 679.2)
Intermediate	The portion of the trawl net aft of the body and forward of the codend, generally tapered from the larger net into a smaller diameter portion joining to the codend.
Bycatch Reduction Device (excluder)	A modification or piece of equipment that allows unwanted marine species to escape from a trawl net or prevents them from being caught.
Live Feed Camera	A camera that transmits a continuous video feed over the internet or a local network.
Codend	The terminal, closed end of a trawl net. (50 CFR 600.10)
Chafing Gear	Webbing or other material that is attached to the trawl net to protect the net from wear and abrasions either when fishing or hauling on deck. (50 CFR 660.11)

As described in the NPFMC's 2012 fleet profiles, AFA catcher/processor (CP) pelagic trawl gear specifications are generally similar to those used by AFA catcher vessels (CVs), but larger. Both vessel types use trawl gear with large net openings and minimal drag due to large mesh sizes and relatively small twine size. Trawl gear size varies based on vessel size and horsepower, such that the larger and more powerful vessels tow larger trawls. Meshes in the front end of the trawl can be as large as 105-ft (32-m) to 210-ft (64-m) and typically have a vertical net opening (headrope to footrope vertical distance) rise of 60-ft (18.3-m) to 180-ft (54.8-m). Net mesh gets smaller towards the intermediate and codend, with codends typically having 4-in (10.2-cm) to 4.5-in (11.43-cm) stretched mesh. Otter boards (or doors) are made of steel and range in size from 16.4-ft^2 (5-m^2) to 45.9-ft^2 (14-m^2). Door spread in most fishing depths ranges from 328-ft (100-m) to 590-ft (180-m), and trawl warp/scope to depth ratio is typically 3 to 1. Clump weights, trawl doors, or the footrope may contact the seafloor for a period of time within a tow, with the duration of which varying depending on how the net is fished. Long wire rope bridles attach the net to the doors, and there are no discs, rollers, or bobbins attached to the trawl footrope or any other portion of a pelagic trawl. Footropes typically extend 590-ft (180-m) to 1,475-ft (450-m). Trawl codends are usually made with polyethylene netting attached to four longitudinal riblines. The riblines are typically chain, wire, or synthetic rope. Floats can be attached along the length of the codend to counteract the weight of the steel components. Container lines around the circumference are attached along the length of the codend to restrict the expansion of the netting, preventing damage and allowing the codend to be hauled up a stern ramp (NPFMC 2012).

Western and Central GOA trawlers consist of smaller CVs (58 to 99 ft LOA) as well as large CPs. Smaller vessels generally use smaller sized pelagic trawls compared with CPs when fishing for pollock that take less horsepower to tow. GOA pelagic trawls typically have a vertical net opening of 120-ft (36.6-m) and a horizontal opening of 240-ft (73.2-m) (wing-end spread of 360-ft (109.7-m)) for vessels

with an average 1,000 hp. Front meshes of large mid-water nets may be as large as 120-ft (36.6-m). Net mesh gets smaller towards the intermediate and codend, with the codend typically having 5-inch (12.7-cm) stretched mesh. Doors are made of steel and range in size from 9.8-ft^2 (3-m^2) up to 22.9-ft^2 (7-m^2). Door spread in most fishing depths and trawl warp/scope combinations is typically 328 ft (100-m) to 590 ft (180-m) (NPFMC 2012).

For both BSAI and GOA vessels, there are no discs or bobbins attached to the footropes or elsewhere on pelagic trawls. Trawls may be fitted with various electronic instruments such as catch sensors in and just forward of the codend, as well as a net sounder or sonar in the forward dorsal (i.e. the front, upper) portion of the net. These commonly used instruments allow vessel operators to better monitor the rate of catch, how wide the net "mouth" is opening, as well as other aspects of fishing efficiency. Data provided by these instruments can be viewed by vessel operators in real time and are connected to the vessel through third wire or wireless systems.

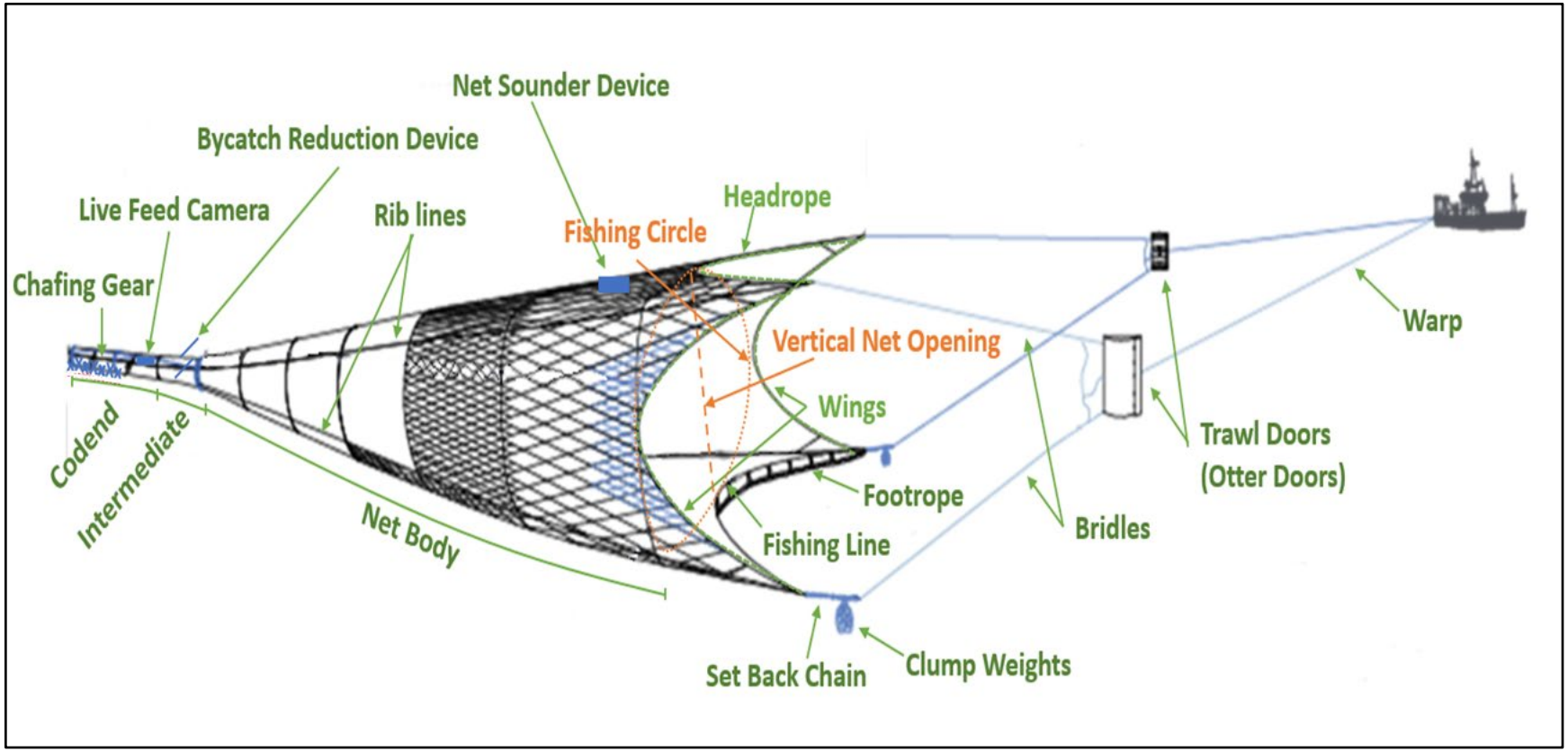

Figure 3-1 Generalized pelagic trawl gear and labeled components. Image modified from: Swan Net Gundry

3.2.2 Nonpelagic Trawl Gear

Nonpelagic trawl gear is all trawl gear that does not meet the definition of pelagic trawl gear and is defined in federal regulation as "a trawl other than a pelagic trawl" (§ 679.2 "Authorized fishing gear"). Fisheries using this gear type include non-AFA trawlers targeting Pacific cod in the BS, the Amendment 80 fleet targeting flatfish, Pacific cod, Atka mackerel and Pacific ocean perch in the BS and Aleutian Islands, as well as GOA trawlers targeting Pacific cod, flatfish, and rockfish. Nonpelagic trawl gear contains characteristics not found in pelagic trawl gear such as discs, bobbins, or rollers to raise the footrope off the seabed, as well as flotation within codends. Mesh size is generally much smaller in the forward section of a nonpelagic trawl when compared to pelagic trawl gear. Vessels directed fishing for flatfish in the BS and Central GOA Regulatory Areas and vessels directed fishing for groundfish with nonpelagic trawl gear in the Modified Trawl Gear Zone (see Table 51 to part 679) must use modified nonpelagic trawl gear as specified at § 679.24(f). Implemented under Amendment 94 to the BSAI FMP, these regulations require participants using nonpelagic trawl gear in the directed fishery for flatfish in the BS subarea to modify the trawl gear and raise portions of the gear off the ocean bottom. Regulations at § 679.24(f) include enforceable standards for modified nonpelagic trawl gear (NPFMC 2020a). The standards include a minimum clearance for the sweeps and a minimum and maximum distance between elevating devices. The standards also describe the measuring locations to determine compliance with the clearance requirement and cross section limitations for the line between elevating devices.

3.2.3 Bycatch Excluder Devices

Since 2001, conservation engineering scientists have worked cooperatively with Alaska fishing industry partners, gear manufacturers, and the trawl fleet to design and test bycatch excluder devices to exclude PSC such as salmon from pelagic trawls or halibut from bottom trawls. Through experimental fishery permits authorized by the Council and NOAA Fisheries, various iterations have been tested. The Council recommended and NMFS implemented requirements through Amendment 110 for IPAs to include provisions to require use of salmon excluder devices. At the time, the Council and NMFS determined that defining these devices by describing a certain excluder design could stifle innovation by prohibiting experimentation that might lead to the development of new and better excluders. The absence of a definition allows any component of pelagic trawl gear that allows non-target species to escape the net to be considered a bycatch excluder device.

In addition to required excluder use under IPAs, voluntary use of salmon bycatch excluders by pollock skippers is increasing. The pollock fishery operating in the GOA has worked to adapt the excluder device for use in the smaller GOA fleet. Much of this work has been conducted by the Alaska fishing industry under EFPs with some help from the Conservation Engineering (CE) group (NPFMC 2024a).

Excluders are located towards the back of trawl gear, forward of the codend. Excluder design has varied greatly based on the species being targeted for release. Excluder devices designed to reduce salmon bycatch are used in pelagic trawl gear, as salmon are often found in the same areas as schools of pollock. **While most salmon excluders are generally placed aft of 5.5 inch mesh in pelagic trawl gear, some fishermen configure excluders within larger meshes forward of the 5.5 inch stretched mesh but aft of 15 inch stretched mesh.** Experimentation with salmon excluder placement is crucial to troubleshoot and determine the most effective configuration for maximum salmon escapement.

Though variations in bycatch excluder devices are often tested and designed under EFPs, there have also been adjustments to these designs or additional bycatch excluder variants that have been developed outside the EFP process. Known variations have included using floats to create openings for salmon to escape on the dorsal and ventral sides of the net, lighting to attract salmon to swim out of the excluder, and a weighted "flapper" panel that closes access to the opening while towing and opens for salmon to escape during slow down periods, turns or during haulback. As of 2016, the over and under excluder

design, which includes flotation and metallic components, was indicated to be the best design for salmon excluders (NMFS 2016a). However, some variations of salmon excluders used in pelagic trawl gear may not include flotation or metallic components (other than connectors).

Previous EFP work has shown that excluder performance varies based on vessel size and horsepower. Bycatch excluder device research and innovations continue with goals to improve reduction of PSC. One such variation currently under development includes metal components, a live feed camera, and a hydrofoil or kite mounted ahead of the codend (C. Rose, personal communication, FishNext Research, Founder and Principal Scientist, November 8, 2024). Other ongoing EFP work is testing a new excluder design installed further forward in the net, compared to currently available salmon excluders, to optimize salmon escapement under summer fishing conditions (pollock "B" season) where chum salmon is the primary salmon species encountered as bycatch in the pollock fishery (Section 1.3.1).

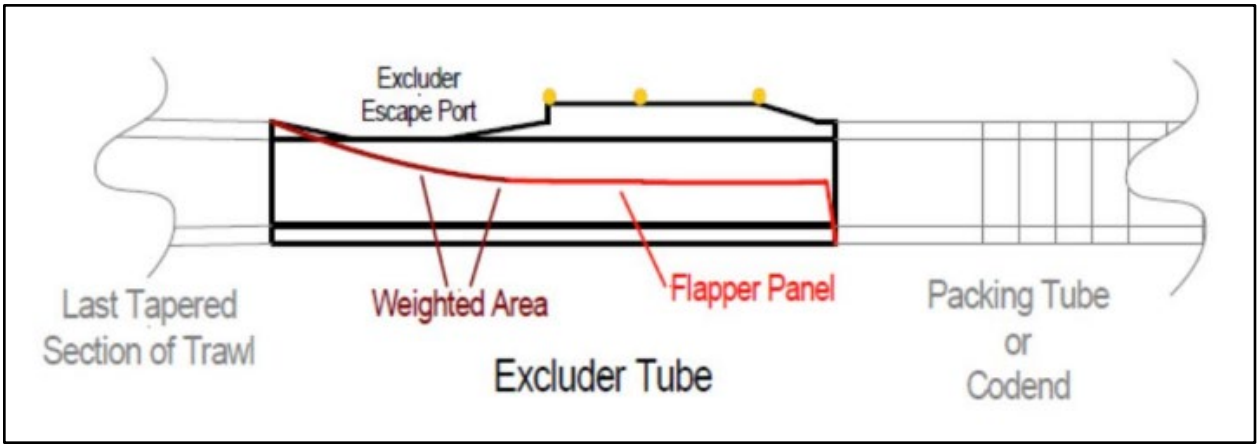

Figure 3-2 Example of a salmon excluder device tested in spring 2013. Image credit: EFP 13-01 Final Report

3.3 Fisheries Descriptions

This section provides a brief overview of fisheries that have historically used pelagic trawl gear. Pelagic trawl gear is used to catch BS pollock, BS and Aleutian Islands POP, GOA pollock, and GOA POP. Only the BS pollock fishery has regulations requiring the use of pelagic trawl gear. All other fisheries with historical use of pelagic trawl gear are done at the vessel operator's discretion. In some discrete areas, spatial closure areas prohibit the use of nonpelagic trawl gear. These areas are discussed in Section 3.4.

3.3.1 Bering Sea Pollock

The BS pollock fishery is the directly regulated entity under the proposed action and is required by regulation to use pelagic trawl gear. Fishery regulations mandate the use of pelagic trawl gear for directed fishing for pollock in the BSAI (§ 679.24(b)(4)). The NMFS Observer Program provides near real-time catch data during the season and vessels operate within well-defined catch limits. The BS pollock fishery is the largest U.S. fishery by volume. From 2011 through 2022, the average annual harvest of BS pollock by all sectors was 1.28 million mt. BS pollock is typically not sold fresh but instead processed into a variety of product forms, the most significant of which are fillets, surimi, and roe. In 2021 and 2022, the total gross first wholesale value of the BS pollock fishery harvest was $1.5 billion.

The management structure of the BS pollock fishery substantially changed in 1998 with the passage of the AFA. Prior to the AFA, vessel participation in the BS pollock fishery was restricted by the existing limited license permit program which endorsed BSAI groundfish licenses by gear type but not by species.

Any trawl vessel could enter the pollock fishery if they had a trawl limited license permit. The AFA identified vessels and processors eligible to participate in the BS pollock fishery and allocated specific percentages of the total allowable catch (TAC) primarily among three different fishery sectors: the inshore sector, CP sector, and the Mothership sector. The inshore sector consists of 85 eligible CVs and 6 cooperatives and receives 50%, the CP sector consists of 20 eligible CPs, 2 cooperatives and 5 eligible CVs and receives 40%, and the Mothership sector consists of 3 eligible motherships, 19 eligible CVs and one associated cooperative and receives 10% (see sections 206(a) and (b) of the AFA). These sectors are allocated TAC annually after allocations are made to the CDQ Program and incidental catch allowances. The CDQ Program was established to provide eligible western Alaska villages an opportunity to participate and invest in BSAI Management Area fisheries, support economic development in western Alaska, alleviate poverty and provide social benefits for residents of western Alaska, and to achieve sustainable and diversified local economies in western Alaska.

The BS pollock TAC is further apportioned seasonally: 45% to the A season (occurring January 20 to June 10) and 55% to the B season (occurring June 10 to November 1). Prior to Amendment 110 to the BSAI Groundfish FMP, 40% of the BS pollock TAC was apportioned in the A season and 60% was apportioned in the B season. The BS pollock fishery targets pre-spawning pollock for their roe in the A season. Fishing typically starts near the regulatory opening and extends into early to mid-April. The B season fishery focuses on targeting pollock for fillet and surimi markets, and the fleet harvests most of the B season TAC during June through early October. Fishing effort in the A season is usually concentrated north and west of Unimak Island, depending on ice conditions and fish distribution. However, there has historically been fishing effort along the BS shelf edge at the 100-meter depth contour and deeper between Unimak Island and the Pribilof Islands, although the general pattern has varied over time (Ianelli et al., 2022). Fishing effort in the B season is more dispersed with recent years' fishing effort occurring in the southeast portion of the BS shelf.

Table 3-2 Number of vessels using pelagic trawl gear and annual catch by pelagic trawl gear in the Bering Sea pollock fishery from 2019 - 2024.

	2019	2020	2021	2022	2023	2024
Number of Vessels	96	99	96	94	88	87
Total Catch (mt)	1,383,891	1,342,964	1,353,101	1,067,532	1,267,464	1,268,501

Source: NMFS Catch Accounting System, queried on January 15, 2025

3.3.2 Bering Sea Pacific Ocean Perch

POP in the BS have been targeted using pelagic trawl gear in the past, however in recent years the fishery has not used pelagic trawl gear. There are no regulations that require the use of pelagic trawl gear to target BS POP. As such, they are not discussed further in this analysis beyond this brief overview.

POP were highly sought by Japanese and Soviet fisheries and supported a major trawl fishery throughout the 1960s. Catches in the eastern BS peaked at 47,000 metric tons (mt) in 1961; the peak catch in the Aleutian Islands region occurred in 1965 at 109,100 mt. These stocks were not productive enough to support such large removals. Catches continued to decline throughout the 1960s and 1970s, reaching their lowest levels in the mid-1980s. With the gradual phase-out of the foreign fishery in the 200-mile U.S. Exclusive Economic Zone (EEZ), a small joint-venture fishery developed but was soon replaced by a domestic fishery by 1990. In 1990 the domestic fishery recorded the highest POP removals since 1977. In some years, POP were managed in the "POP complex" management group, which also included rougheye rockfish, shortraker rockfish, northern rockfish, and sharpchin rockfish. Beginning in 2002 POP were managed as a single stock across the BSAI (with the Acceptable Biological Catch (ABC) subdivided between the Eastern Bering Sea and AI subareas), and the BSAI Overfishing Limit, ABCs, TACs, and

catches from 2002 to 2022 is discussed further in the 2022 NPFMC BS and Aleutian Islands SAFE (Spencer and Ianelli 2022).

3.3.3 Gulf of Alaska Pollock

Vessels targeting Alaska pollock in the GOA are not required by regulation to fish with pelagic trawl gear. They are discussed in this analysis because it is the primary gear type used for the fishery. The pollock target fishery in the GOA is entirely shore-based with approximately 96% of the catch taken with pelagic trawls. The only condition in which vessels targeting GOA pollock would be required to use pelagic trawl gear is during operations in Type I and Type II closures or other spatial closure areas identified in Section 3.3.

The commercial fishery for walleye pollock in the GOA started as a foreign fishery in the early 1970s (Megrey 1989). Catches increased rapidly during the late 1970s and early 1980s. A large spawning aggregation was discovered in Shelikof Strait in 1981, and a fishery developed for which pollock roe was an important product. The domestic fishery for pollock developed rapidly in the GOA with only a short period of joint venture operations in the mid-1980s. The fishery was fully domestic by 1988. During winter, fishing effort targets pre-spawning aggregations in Shelikof Strait and near the Shumagin Islands. Fishing in summer is less predictable, but typically occurs in deep-water troughs on the east side of Kodiak Island and along the Alaska Peninsula (Monnahan et al. 2023). Beginning in 1998, full retention of pollock is required under the improved retention/improved utilization program.

Table 3-3 Number of vessels using pelagic trawl gear, annual catch by pelagic trawl gear, and percentage of total catch in pelagic trawl gear compared with nonpelagic trawl gear in the GOA pollock fishery from 2019 through 2024.

	2019	2020	2021	2022	2023	2024
Number of Vessels	62	61	57	54	52	54
Total Catch (mt)	116,705	103,802	99,524	133,657	135,733	127,197
% of Trawl target catch caught with pelagic trawl gear (versus nonpelagic trawl gear)	95%	93%	96%	97%	97%	98%

Source: NMFS Catch Accounting System, queried on January 15, 2025

3.3.4 Gulf of Alaska Pacific Ocean Perch

POP is a pelagic rockfish species that is managed in the Central GOA under the Rockfish Program. Although vessels targeting POP in the GOA are not required by regulation to fish with pelagic trawl gear, they are discussed in this analysis because many vessels use pelagic trawl gear (Table 3-4). The only condition in which vessels targeting GOA POP are required to use pelagic trawl gear occurs during operations in habitat and gear limitations zones identified in Section 3.4. These areas prohibit the use of nonpelagic trawl gear and thus limit trawling activity to vessels using pelagic trawl gear within the confines of that specific area. For example, the Type 1 and Type 2 closures near Kodiak (see § 679.22(b)). There is very limited POP fishing that occurs in any of the areas identified in Section 3.4. As such, they are not discussed further in this analysis beyond this brief overview.

The trawl fishery for POP in the GOA began with foreign fleets (mostly from the U.S.S.R. and Japan) in the early 1960's. Catches peaked in 1965 with total landings at 350,000 mt. This apparent overfishing resulted in a gradual but substantial decline in total catch, bottoming out in 1985. The domestic fishery

first became important in 1985 and expanded each year alongside increased quotas until 1991. Since 1996, catches of POP have increased again, as good recruitment and increasing biomass for this species have resulted in larger TACs. Before 1996, most of the POP trawl catch (>90%) was taken by large factory-trawlers that processed the fish at sea. A significant change occurred in 1996, however, when smaller shore-based trawlers began taking a sizable portion of the catch in the Central GOA for delivery to processing plants in Kodiak. These vessels averaged about 50% of the catch in the Central Gulf area since 1998. By 2008, CVs were taking 60% of the catch in the Central Gulf area and 35% in the West Yakutat area. Factory trawlers continue to take nearly all the catch in the Western GOA (Hulson et al, 2021).

In 2007, the Rockfish Program was implemented to enhance resource conservation and improve economic efficiency for harvesters and processors who participate in the Central GOA rockfish fishery. This rationalization program established cooperatives among trawl vessels and processors which receive exclusive harvest privileges for rockfish management groups. The primary rockfish management groups are northern rockfish, POP, and dusky rockfish. The season runs from the beginning of April through mid-November (Hulson et al, 2021).

Total catch of POP in the GOA since 2016 has ranged from a low of 23,035 mt during that year to a high of 28,812 mt in 2023. Historically, bottom trawls have accounted for nearly all the commercial harvest of POP. In recent years, however, the portion of the POP catch taken by pelagic trawls has increased. The percentage of the POP Gulf-wide catch taken in pelagic trawls increased from an average of 7% during 1990-2005 to an average of 33% with the maximum amount of 40% of rockfish harvested in 2023.

Table 3-4 Number of vessels using pelagic trawl gear, annual catch by pelagic trawl gear, and percentage of total catch in pelagic trawl gear compared with nonpelagic trawl gear in the GOA rockfish fishery from 2019 - 2024.

	2019	2020	2021	2022	2023	2024
Number of Vessels	25	27	27	20	23	16
Total Catch (mt)	7,176	11,311	13,980	13,021	14,778	12,133
% of Trawl target catch caught with pelagic trawl gear (versus nonpelagic trawl gear)	25%	35%	34%	32%	40%	42%

Source: NMFS Catch Accounting System, queried on January 15, 2025

3.4 Regulatory Closure Zones and Gear Limitations

Numerous regulations within part 679 rely upon the pelagic trawl gear and nonpelagic trawl definitions as a foundation for subsequent management measures. These regulations pertain to various topics including directed fishing allowances, area and gear closures, bycatch and PSC limits, and recordkeeping and reporting requirements.

While the BS pollock fishery is required to use pelagic trawl gear (§ 679.24), there is no similar requirement for vessels targeting other groundfish or pollock in the GOA. Certain area and gear closures restrict nonpelagic trawls and limit trawling activity to vessels using pelagic trawl gear within the confines of that specific area. Trawl vessels fishing in these areas could thus be impacted by any changes to the pelagic trawl gear definition. In most areas, there is limited overlap of where the BS pollock fishery overlaps with these protection areas. The Red King Crab Closure Area is one area that has overlap and has been referenced in other analyses evaluating the efficacy of the Red King Crab Closure Area (NPFMC 2024b). This section gives a brief overview of those areas.

Bering Sea

- Red King Crab Closure Area. Directed fishing for groundfish by vessels using trawl gear other than pelagic trawl gear is prohibited at all times.
- Alaska Seamount Habitat Protection Areas. No federally permitted vessel may fish with bottom contact gear in the Alaska Seamount Habitat Protection Areas, as described in Table 22 to part 679.
- Aleutian Islands Coral Habitat Protection Areas. No federally permitted vessel may fish with bottom contact gear in the Aleutian Islands Coral Habitat Protection Areas, as described in Table 23 to part 679.
- Aleutian Islands Habitat Conservation Area. Except within those areas identified as opened to nonpelagic trawl gear fishing in Table 24 to part 679, no federally permitted vessel may fish with nonpelagic trawl gear in the Aleutian Islands Habitat Conservation Area, as described in Table 24 to part 679.
- Bowers Ridge Habitat Conservation Zone. No federally permitted vessel may fish with mobile bottom contact gear in the Bowers Ridge Habitat Conservation Zone, as described in Table 25 to part 679.
- Bering Sea Habitat Conservation Area. No federally permitted vessel may fish with nonpelagic trawl gear in the Bering Sea Habitat Conservation Area specified at Table 42 and Figure 16 to part 679.
- Northern Bering Sea Research Area. No federally permitted vessel may fish with nonpelagic trawl gear in the Northern Bering Sea Research Area specified at Table 43 and Figure 17 to part 679.
- Nunivak Island, Etolin Strait, and Kuskokwim Bay Habitat Conservation Area. No federally permitted vessel may fish with nonpelagic trawl gear in the Nunivak Island, Etolin Strait, and Kuskokwim Bay Habitat Conservation Area specified at Table 44 and Figure 21 to part 679.
- St. Lawrence Island Habitat Conservation Area. No federally permitted vessel may fish with nonpelagic trawl gear in the St. Lawrence Island Habitat Conservation Area specified at Table 45 to part 679.
- St. Matthew Island Habitat Conservation Area. No federally permitted vessel may fish with nonpelagic trawl gear in the St. Matthew Island Habitat Conservation Area specified at Table 46 to part 679.

Gulf of Alaska

- Marmot Bay Tanner Crab Protection Area: No federally permitted vessel may fish with trawl gear in the Marmot Bay Tanner Crab Protection Area, as described in Figure 5 to this part, except federally permitted vessels directed fishing for pollock using pelagic trawl gear.
- Type I closures: No person may trawl in waters of the EEZ within the vicinity of Kodiak Island, as shown in Figure 5 to part 679 as Type I areas, from a vessel having any trawl other than a pelagic trawl either attached or on board.
- Type II closures: From February 15 to June 15, no person may trawl in waters of the EEZ within the vicinity of Kodiak Island, as shown in Figure 5 to part 679 as Type II areas, from a vessel having any trawl other than a pelagic trawl either attached or on board.
- Cook Inlet: No person may use a nonpelagic trawl in waters of the EEZ of Cook Inlet north of a line from Cape Douglas (58°51.10′ N. lat.) to Point Adam (59°15.27′ N. lat.).
- Gulf of Alaska Coral Habitat Protection Areas: No federally permitted vessel may fish with bottom contact gear in the Gulf of Alaska Coral Habitat Protection Areas, as described in Table 26 to part 679.

- Gulf of Alaska Slope Habitat Conservation Areas: No federally permitted vessel may fish with nonpelagic trawl gear in the Gulf of Alaska Slope Habitat Conservation Areas, as described in Table 27 to part 679.

Several regulations involving area closures (Alaska Seamount Habitat Protection Areas, Aleutian Islands Coral Habitat Protection Areas, Bower's Ridge Habitat Conservation Zone, and GOA Coral Habitat Protection Areas) rely upon the mobile bottom contact gear and bottom contact gear definitions, which are in turn based upon the pelagic and nonpelagic gear definitions.

Associated gear limitations and prohibitions:

- BSAI trawl gear performance standard: Except for catcher vessels in the trawl EM category, it is unlawful for any person to use a vessel to participate in a directed fishery for pollock using trawl gear and have on board the vessel, at any particular time, 20 or more crabs of any species that have a carapace width of more than 1.5 inches (38 mm) at the widest dimension.
- GOA trawl gear performance standard: Except for catcher vessels in the trawl EM category, it is unlawful for any person to use a vessel to participate in a directed fishery for pollock using trawl gear when directed fishing for pollock with nonpelagic trawl gear is closed and have on board the vessel, at any particular time, 20 or more crabs of any species that have a carapace width of more than 1.5 inches (38 mm) at the widest dimension.
- Trawl footrope: No person trawling in any GOA area limited to pelagic trawling under § 679.22 may allow the footrope of that trawl to be in contact with the seabed for more than 10 percent of the period of any tow.
- BSAI pollock nonpelagic trawl prohibition: No person may use nonpelagic trawl gear to engage in directed fishing for pollock in the BSAI (§ 679.24 "Gear Limitations").

3.5 Related Regulations

The regulatory definition of a pelagic trawl net varies across jurisdictional boundaries pertaining to state and federal waters off Alaska (5 AAC 39.105 10 C (ADF&G 2023)). Vessels regularly participate in Federal and state water trawl fisheries and therefore have to comply with different sets of regulatory restrictions depending on the area of operation. This added complexity can create confusion for fishermen and could contribute to noncompliance. The pelagic trawl gear definitions are listed in Table 3-5 by region for jurisdictions with potential for crossover vessel participation (Alaska pollock fishery in Alaska Federal and state waters, Pacific whiting fishery within the West Coast federal waters).

Table 3-5 Pelagic trawl gear definition by region

Regulatory Jurisdiction	Pelagic Trawl Definition
Fisheries of the Exclusive Economic Zone off Alaska (§ 679.2)	Pelagic trawl gear means a trawl that: (i) Has no discs, bobbins, or rollers; (ii) Has no chafe protection gear attached to the footrope or fishing line; (iii) Except for the small mesh allowed under paragraph (14)(ix) of this definition: (A) Has no mesh tied to the fishing line, headrope, and breast lines with less than 20 inches (50.8 cm) between knots and has no stretched mesh size of less than 60 inches (152.4 cm) aft from all points on the fishing line, headrope, and breast lines and extending passed the fishing circle for a distance equal to or greater than one half the vessel's LOA; or (B) Has no parallel lines spaced closer than 64 inches (162.6 cm) from all points on the fishing line, headrope, and breast lines and extending aft to a section of mesh, with no stretched mesh size of less than 60 inches (152.4 cm) extending aft for a distance equal to or greater than one-half the vessel's LOA; (iv) Has no stretched mesh size less than 15 inches (38.1 cm) aft of the mesh described in paragraph (14)(iii) of this definition for a distance equal to or greater than one-half the vessel's LOA;

Regulatory Jurisdiction	Pelagic Trawl Definition
	(v) Contains no configuration intended to reduce the stretched mesh sizes described in paragraphs (14)(iii) and (iv) of this definition; (vi) Has no flotation other than floats capable of providing up to 200 lb (90.7 kg) of buoyancy to accommodate the use of a net-sounder device; (vii) Has no more than one fishing line and one footrope for a total of no more than two weighted lines on the bottom of the trawl between the wing tip and the fishing circle; (viii) Has no metallic component except for connectors (e.g., hammerlocks or swivels) or a net-sounder device aft of the fishing circle and forward of any mesh greater than 5.5 inches (14.0 cm) stretched measure; (ix) May have small mesh within 32 ft (9.8 m) of the center of the headrope as needed for attaching instrumentation (e.g., net-sounder device); and (x) May have weights on the wing tips.
Alaska State Waters (5 AAC 39.105(10)(C))	A pelagic trawl is a trawl where the net, or the trawl doors or other trawl-spreading device, do not operate in contact with the seabed, and which does not have attached to it any protective device, such as chafing gear, rollers, or bobbins, that would make it suitable for fishing in contact with the seabed;
Fisheries off West Coast States (50 CFR 660.11)	Midwater (pelagic or off-bottom) trawl means a trawl in which the otter boards and footrope of the net remain above the seabed. It includes pair trawls if fished in midwater. A midwater trawl has no rollers or bobbins on any part of the net or its component wires, ropes, and chains. For additional midwater trawl gear requirements and restrictions, see § 660.130(b), subpart D. (§ 660.130(b)(2)) Midwater trawl gear must have unprotected footropes at the trawl mouth, and must not have rollers, bobbins, tires, wheels, rubber discs, or any similar device anywhere on any part of the net. The footrope of midwater gear may not be enlarged by encircling it with chains or by any other means. Ropes or lines running parallel to the footrope of midwater trawl gear must be bare and may not be suspended with chains or any other materials. Sweep lines, including the bottom leg of the bridle, must be bare. For at least 20 ft (6.15 m) immediately behind the footrope or headrope, bare ropes or mesh of 16-inch (40.6-cm) minimum mesh size must completely encircle the net.

4 Regulatory Impact Review

The preparation of an RIR is required under Presidential Executive Order (E.O.) 12866 (58 FR 51735, October 4, 1993). The requirements for all regulatory actions specified in E.O. 12866 are summarized in the following Statement from the E.O.:

> *In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider. Further, in choosing among alternative regulatory approaches agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.*

E.O. 12866 requires that the Office of Management and Budget review proposed regulatory programs that are considered to be "significant." A "significant regulatory action" is one that is likely to:

- Have 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;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in E.O. 12866.

As part of this analysis, the need for the proposal is described in Section 1.1, and the alternatives are described in Chapter 2. Chapter 3 provides a description of the fisheries affected by this action, Chapter 4 analyzes the operational and economic impacts of the proposed alternatives, including the impacts on small entities. Chapter 5 discusses environmental impacts, and Chapter 6 addresses the management considerations relevant to the alternatives under consideration.

The modifications in the action alternative address ambiguities in the pelagic trawl gear definition at paragraph (14) of the definition of "authorized fishing gear" at § 679.2. An updated regulatory definition of pelagic trawl gear is needed to clearly allow commonly used components in codends and bycatch excluder devices, allow instrumentation necessary to monitor and adjust net performance, and remove unnecessary outdated text. The purpose of this action is to clearly allow commonly used components in codends and bycatch excluder devices, and many of the options within the action alternative would accomplish this, if selected in combination. However, some of the options would require gear operators to change or modify common pelagic trawl gear configurations already being employed in the federal commercial fisheries off Alaska, including those using bycatch excluder devices. Options within the action alternative are intended to improve clarity by better aligning the regulations with common gear designs, including bycatch excluder devices, that meet the conservation and management goals for pelagic trawl fisheries. These options are intended to facilitate compliance and enforcement without requiring material changes to current gear configurations. Conversely, under the no action alternative, vessel operators that continue to use common gear configurations may assume a risk of enforcement action. Therefore, in many ways the no action alternative would have a greater impact to user groups and stakeholders than the options under the action alternative.

Overall, this action would not change existing management measures established in the BSAI or GOA FMPs. These management measures are summarized in Table ES-1 in each FMP[17] and would remain unchanged by this action. Notably, this action does not change the process for establishing total allowable catch limits or PSC limits for any species. This action includes options for specific regulatory changes to the definition of pelagic trawl gear to improve regulations by better aligning the regulations with common gear designs that meet the conservation and management goals for pelagic trawl fisheries. Furthermore, this action is intended to be consistent with existing management measures.

This section includes an analysis of two alternatives: (1) no action and (2) revising specific provisions included paragraph (14) definition of authorized fishing gear at § 679.2 for pelagic trawl gear. Alternative 2 includes five options, which are not exclusive and can be chosen separately or in any combination:

Option 1. Specify that the limitations on flotation and metallic components are not applicable to the codend.

Option 2. Remove outdated text related to parallel line trawls.

Option 3. Allow the use of flotation aft of:

Suboption 1: 5.5 inch stretched mesh, or

Suboption 2: 15 inch stretched mesh.

Option 4. Allow instruments capable of observing, monitoring, or adjusting the fishing gear, catch, fishing activity, or fishing environment (including seafloor clearance) to be attached to pelagic trawl gear. Floats, capable of providing up to 100 lb (45.3 kg) of buoyancy, may be attached to or within 6 feet of each instrument.

Option 5. Allow the use of metallic components in the following locations:

Suboption 1: Forward of the fishing circle.

Suboption 2: Aft of the fishing circle and forward of:

a) 5.5 inch stretched mesh, or

b) 15 inch stretched mesh.

Suboption 3: Aft of:

a) 5.5 inch stretched mesh, or

b) 15 inch stretched mesh.

This section includes an assessment of the expected outcomes of the specific changes considered in the action alternative's options and suboptions, as well as an assessment of the expected outcomes of leaving the regulations within paragraph (14) of the definition of authorized fishing gear in § 679.2 for pelagic trawl gear at status quo.

Assessing the effects of these alternatives and options includes a qualitative assessment of the impacts based on available information. In general, the effects arise from the actions of individual participants in the fisheries under the incentives, opportunities, or potential for enforcement action under different alternatives and options. Predicting these individual actions and their effects is constrained by incomplete information concerning the fisheries, including the absence of complete economic information and well-tested models of fishing behavior under different institutional and regulatory structures. In addition,

[17] Available at https://www.fisheries.noaa.gov/management-plan/groundfish-gulf-alaska-management-plan and https://www.fisheries.noaa.gov/management-plan/groundfish-bering-sea-and-aleutian-islands-management-plan

additional external factors will influence the response of the individual fishery participants under each option under the action alternative.

See Chapter 6 for a discussion of the regulatory approach and potential changes to the regulations to inform the public and Council discussion on how each option could be implemented.

4.1 Alternative 1: No Action

Under Alternative 1, pelagic trawl gear as defined in paragraph (14) of the definition of "authorized fishing gear" at § 679.2 would remain unchanged. Without making any changes to the definition (as under Alternative 2), many vessels using pelagic trawl gear could continue to be at risk of enforcement action, including monetary penalties for non-compliance with the pelagic trawl gear definition. Further, the regulatory language would remain outdated and would continue to disallow commonly used gear components and configurations that serve important conservation and management purposes, contrary to existing management goals and objectives.

Alternative 1 may negatively impact vessel owners and operators participating in the BS pollock fishery because they are required to use pelagic trawl gear. To avoid potential enforcement action, vessel owners and operators in the BS pollock fishery would need to retrofit their gear to be compliant with the existing definition.

The no action alternative may also negatively impact other pelagic trawl gear operators, including vessels targeting POP in the BS and Central GOA as well as vessels targeting pollock in the GOA. GOA vessels are required to use pelagic trawl gear only when fishing certain static closure areas closed to directed fishing with nonpelagic trawl gear (See Section 3.4). To the degree that currently used trawl gear configurations do not comply with the regulatory definition of pelagic trawl gear, these vessel owners and operators risk potential enforcement action(s). Vessel owners and operators targeting POP in the BS and Central GOA, as well as other vessels targeting pollock in the GOA, could retrofit their gear to be compliant with the existing definition or avoid fishing in areas where pelagic trawl gear is required.

Many commonly used gear configurations do not comply with multiple aspects of the regulatory definition of pelagic trawl gear including the use of flotation and metallic components in the codend, and the use of flotation and metallic components (including instruments and weighted "flapper" panels) in salmon bycatch excluders. To the degree that retrofitting nets to be compliant could change the performance of the net, there could be changes to the resulting catch per unit effort (CPUE). Gear designs currently used by vessel owners and operators have been developed and modified over time to maximize efficiency, increase CPUE, and meet other management goals and objectives. Therefore, analysts assume that using gear retrofitted to be compliant would negatively impact vessel owners and operators and result in decreased efficiency. Therefore, the risk of non-compliance may be an economically efficient operational choice for these gear users. Similar logic can be applied to the operational choices of fishing in areas where pelagic trawl gear is required, if the vessel operator could achieve the same fishing efficiency and maximize CPUE elsewhere, then it would not be worth the compliance risk to fishing inside these areas with non-compliant gear.

Alternative 1 - Codend

The no action alternative would keep language in the definition of pelagic trawl gear at § 679.2 unchanged as it pertains to the codend. Under Alternative 1, the use of flotation in the codend would continue to be inconsistent with the definition of pelagic trawl gear at § 679.2 when read in combination with § 600.10.

According to the current pelagic trawl gear definition, flotation is only allowed in pelagic trawl gear to offset the weight of one net-sounder device. At the time the current definition was promulgated in 1993, net-sounder devices required flotation to measure bottom depths correctly. The Council and NMFS

limited flotation in this way to allow net sounders to continue operating effectively while also preventing the use of flotation in the headropes of pelagic trawl gear to disincentivize vessel operators from using large pelagic trawl nets in shallow water when midwater trawl doors were ineffective (58 FR 17196, April 1, 1993). The rule implementing the current definition focused on limiting flotation in the forward sections of pelagic trawl gear, and did not express any intent to limit flotation in the codend. Since the current definition was implemented, it was generally assumed by participants and fishery managers alike that use of flotation in the codend was allowed until the conflict with the national definition of codend at § 600.10 became apparent.

Under Alternative 1, the use of metallic components in the codend would continue to be ambiguous based on the current language in the regulations. Though the AKR SFD understands the current language to mean that metallic components are intended to be allowed in the codend, the regulatory language is open to multiple different interpretations and thus creates ambiguity. It is common practice for codends attached to pelagic trawl nets to include metallic components, such as chain riblines. Chain riblines are durable and have minimal stretching, providing longevity for codends that lift hundreds of tons of fish under extreme tension multiple times a day. Metal components like chain riblines in the codend can also improve safety for vessel crew from net failure when codends are under straining conditions while being hauled on deck.

Limiting codend design does not contribute to management goals to minimize bycatch or reduce impacts to sensitive benthic habitats. Even when a vessel operator intends to fish a pelagic trawl net very close to the seafloor, the codend is not the portion of the net that would be expected to be in contact with the seafloor due to hydrodynamic forces, as well as the presence of flotation devices attached to the codend. Flotation allows the codend to be buoyed while the net is full of catch, and offsets the weight of the codend's chain riblines. Without flotation, under certain conditions the codend would sink, cutting off water flow through the net and making this fishing gear not viable. Consistent water flow through the net is a prerequisite to using trawl gear and maintaining the net shape, therefore flotation in the codend is essential. Not allowing flotation to be used in a codend could increase contact with the seafloor, potentially increasing impacts to sensitive benthic habitats (see Section 5.3). Furthermore, if the codend were to drag along the seafloor, it would also potentially destroy a very expensive piece of equipment and jeopardize the entire catch if holes occurred.

Under Alternative 1, regulatory compliance would remain a challenge for many vessel operators due to the integral nature of flotation and metallic components in the codend. Vessels using non-compliant gear could be subject to enforcement action, including monetary penalties, if they continue using codends that use flotation. To comply with the language of the definition of pelagic trawl gear at § 679.2 when read in combination with 50 CFR 600.10, gear users would need to modify their current gear configurations via purchasing new codends, or removing flotation from current codends attached to pelagic trawl gear. The cost of new codends (that include flotation and metallic components) vary widely depending on the size and design. Gear users would incur the costs of potential future enforcement actions or any new equipment required under this alternative. Furthermore, the functional viability of a pelagic trawl codend without flotation would be greatly reduced, and it is unknown whether CPUE could remain at current levels with these gear modifications. Therefore, the economic impact of Alternative 1, with respect to the codend, is expected to be negative due to the costs associated with bringing gear into compliance and the potential reduced functionality of codends that are compliant under the current regulatory definitions.

Alternative 1 - Parallel Line Trawls

Outdated language restricting the use of parallel line trawls would remain in the pelagic trawl definition under this alternative. Under Alternative 1, retaining this outdated language is not expected to affect current trawl operations because parallel line trawls are antiquated and no longer used in North Pacific fisheries. Retaining the language in this text from regulations may be confusing for interpreting

regulations about parallel line trawls in relation to pelagic trawl gear. Furthermore, retaining language relevant to rope trawls would not improve regulatory clarity for enforcement.

Alternative 1 - Flotation

As the definition of pelagic trawl gear at § 679.2 is written, flotation is allowed only for one net-sounder device and not for any other portion of the net including in the codend. Under Alternative 1, flotation would continue to be restricted from use in other portions of the net, including flotation commonly used in bycatch excluders and codends. Use of flotation in the codend has been discussed previously in this section and is not repeated here.

The use of flotation in bycatch excluder devices is common practice, and certain designs necessitate the use of flotation to function properly (See Section 3.2.3). Use of bycatch excluder devices with pelagic trawl gear is beneficial to reduce bycatch of salmon consistent with IPAs within the AFA trawl fleet aimed at reducing Chinook and chum salmon bycatch.

Under Alternative 1, common bycatch excluder designs would not comply with the regulatory definition of pelagic trawl gear. Existing PSC limits and bycatch avoidance measures require the use of salmon excluders in the BS pollock fishery. Therefore, vessel operators are incentivized to use salmon excluders that minimize salmon bycatch while maximizing the retention of pollock. To comply with the limitations applicable to pelagic trawl gear, gear users would need to remove or retrofit bycatch excluder devices to remove flotation, or use excluder designs without flotation. As of 2016 (prior to the implementation of Amendment 110), over and under excluders were the most effective design (NMFS 2016a). These excluder designs use flotation and metallic components. To the degree that the flotation is necessary for the device to properly function, and to the degree that designs that use flotation (*i.e.,* over/under excluders) are more effective than those without, the removal of flotation could potentially reduce the effectiveness of bycatch excluder devices and reduce operational efficiency. These conditions could result in negative economic impacts due to potential increases in PSC or resulting fleet movement to less productive fishing areas with less bycatch.

Alternative 1 - Instruments

As described in the current definition, a net-sounder device is the only instrument expressly allowed to be attached to any section of a pelagic trawl net. Based upon this explicit allowance for a net-sounder device, it could be assumed that any other electronic instruments containing metal parts or wires are considered metallic components are not allowed in the middle portion of the net (aft of the fishing circle and forward of 5.5 inch stretched mesh). Available trawl technology has evolved since 1993. A net-sounder device, often mounted at or near the headline of the trawl net, is defined in § 679.2 as a "sensor used to determine the depth from the water surface at which a fishing net is operating." Modern net sonar devices using multiple element transducers have largely replaced net-sounder devices. While net sounders allow net monitoring and visualization within a single plane, newer net sonars allow visualization of "slices" of the area in front of the net as well as distance from the water surface or seabed by transmitting vertically and horizontally along multiple planes. There is an array of sensing technology available on the market, including but not limited to depth and temperature sensors, catch sensors, net-sounders, doorspread sensors, trawl warp measurement sensors, and bottom contact sensors. Catch sensors are commonly mounted at various positions along and just forward of the codend that allow vessel operators to monitor codend fullness to know when to haul the net, with companies recommending several sensors be placed along the trawl to best determine rate of catch and fullness (FAO 2024). Live feed cameras and lights can even allow vessel operators to view their catch in real time and move locations if PSC is high. Bycatch excluder designs commonly include both live feed cameras and lights, as described further in Section 3.2.3.

Under Alternative 1, these commonly used technologies, except for one net-sounder device, could continue to be restricted in pelagic trawl gear. Attaching instruments to the middle portion of the net (aft

of the fishing circle and forward of 5.5 inch stretched mesh) that would aid in observing, monitoring, or adjusting the fishing gear, catch, fishing activity, or fishing environment (including seafloor clearance) could be non-compliant with the current definition and put the vessel owner and operator at risk for enforcement action. The use of these technologies and instrumentation are assumed to improve CPUE and help reduce bycatch, consistent with existing management goals.

Alternative 1 - Metallic Components

Under Alternative 1, the regulatory language in paragraph (14)(viii) of the pelagic trawl gear definition would remain unchanged. That language states that a pelagic trawl, "Has no metallic component except for connectors (e.g., hammerlocks or swivels) or a net-sounder device aft of the fishing circle and forward of any mesh greater than 5.5 inches (14.0 cm) stretched measure." This regulatory language is not clear, and NMFS noted in the February 2024 discussion paper that this regulatory language could be interpreted in multiple ways. The AKR SFD's interpretation of this language allows one net sounder anywhere on pelagic trawl nets, including in the portion of the net between the 5.5 inch (14.0 cm) stretched mesh and the fishing circle. Regulatory language that can be interpreted in multiple ways creates confusion for user groups and would not be clarified under the no action alternative.

Alternative 1 - Summary of impacts

As described in this section, under Alternative 1 vessel owners and operators using common pelagic trawl gear configurations could be subject to enforcement actions including monetary penalties if they do not modify certain components of their gear to comply with all aspects of the existing trawl gear definition. To bring trawl gear into compliance under Alternative 1, vessel operators would need to retrofit their current gear or purchase new gear that adheres to the regulatory definition. Vessel owners and operators would bear costs associated with bringing gear into compliance with the current definition.

Gear designs that comply with all aspects of the existing pelagic trawl gear definition at § 679.2, as well as the codend definition at § 600.10, would likely have limited functionality. Codends without flotation would have reduced buoyancy, potentially cutting off water flow through the net and making the fishing gear less efficient or not functional under certain conditions. Greater bottom contact could occur without flotation in the codend, an impact that is contradictory to the purpose of defining pelagic versus nonpelagic gear for area-based closures. Bycatch excluder devices without flotation, metallic components, or technological instrumentation (or some combination of the three) may have reduced functionality compared to commonly used bycatch excluder designs that include these elements. To the extent that flotation and metallic components improve the performance of bycatch excluder devices, operators may be limited to suboptimal excluder device designs. This would not be consistent with past council actions and existing management objectives to reduce bycatch to the extent practicable under National Standard 9.

4.2 Alternative 2: Revise Definition of Pelagic Trawl Gear

The changes considered in Alternative 2 would revise and clarify the current regulatory definition of pelagic trawl gear and/or remove gear restrictions. The entities directly impacted by these regulatory changes would be vessel owners and operators using pelagic trawl gear in BS and GOA fisheries. The removal of gear restrictions would increase operational efficiency for fishery participants using pelagic trawl gear by allowing them to continue using current pelagic trawl gear specifications and technologies. Alternative 2 could also allow vessel operators to modify and improve their gear incrementally as innovations occur in line with existing conservation and management goals. The action alternative would also allow current pelagic trawl gear to continue functioning as designed and tested, without the need to retrofit gear to comply with regulations. The economic impacts of the action alternative are expected to be positive for impacted entities.

Although direct economic benefits cannot be quantified, Alternative 2 and associated options are expected to have a net positive impact on fishery participants by aligning the regulations with current gear configurations consistent with the Council's purpose and need for this action. To the degree that the options included in Alternative 2 would ease regulatory constraints, the expected effects are described in the following sections.

Alternative 2 is expected to allow the continued use of common pelagic trawl gear components.

- Option 1 would allow use of flotation and metallic components in codends.
- Option 2 would remove outdated text within paragraph (14)(iii)(B) of the definition of authorized fishing gear related to parallel line trawls. Parallel line trawls are obsolete and associated text could be removed to streamline the regulation.
- Option 3 would allow for flotation to be used in areas of the net where the codend and bycatch excluder devices are commonly located. Bycatch excluder devices currently in use, such as salmon excluders, often use flotation to keep excluder openings and escape paths open while fishing.
- Option 4 would allow instruments to be attached to pelagic trawl nets, along with a limited quantity of flotation allowed per instrument.
- Option 5 would specify the areas of the pelagic trawl net where metallic components are allowed. The current regulatory definition limiting metallic components can be interpreted in multiple ways, and Option 5 would clarify and define the areas of the net in which these components may be used.

4.2.1 Option 1: Allow flotation and metallic components in the codend

Option 1 would allow vessels to continue to use codend designs with flotation and metallic components by specifying that restrictions limiting their use are not applicable to the codend. Restrictions on flotation and metallic components would remain in place for the remainder of pelagic trawl gear. Option 1 would clearly denote the Council's intent to treat the codend differently from the rest of pelagic trawl gear. The codend could be delineated for regulatory purposes by the selvedge line where it is attached to the rest of the pelagic trawl gear. Mesh size could also be used to delineate the codend, however mesh sizes are not uniform across all pelagic trawl gear, and specifying a mesh size delineation may require operators to modify their current gear to comply.

Option 1 aligns regulations with current fishing practices, and would clearly exclude the codend from limitations on flotation and metallic components set forth in the trawl gear definition.[18] This option is also in line with how pelagic trawl gear has been designed and fished in the North Pacific since 1993 and would have minimal impacts to the fleet and no impact on management goals. This option would not conflict with existing limitations contained in the pelagic trawl gear definition or the nonpelagic trawl gear definition applying to the trawl net. As such, Option 1 is not anticipated to involve a substantive change to fishing operations.

Flotation in the codend is commonly used to make the codend neutrally buoyant and prevent the codend from dragging on the bottom under heavy loads, which can damage the net, may result in loss of catch, and may increase impacts to sensitive benthic habitats. Floats also counteract the weight of structural components added to the codend for safety such as metal riblines. Fishery participants have stated that flotation in the codend additionally helps maintain the tapered net shape and water flow while fishing, and aids the haulback process. It can also maintain neutral buoyancy if fish swim bladders burst and could also prevent the net from twisting during deployment or haulback. While limited to one vessel, research

[18] The stated goal of Option 1 could also be accomplished through Options 3, 4, and 5 if all three are chosen.

has found that the codend, which had large floats inside, typically stayed between the headrope and footrope during all tows (NPFMC 2023b).

Metal components like chain riblines in the codend can protect crew from net failure when codends are under straining conditions while being hauled on deck. Full or overfilled codends, bad weather conditions and foreign objects can result in net failure. As such, codends are often designed with reinforcements or chafing gear to prevent loss of catch and safety of crew.

Retention of fish is important for total accountability and precise estimate of total harvest and accounting of salmon PSC estimates. Regulations require full retention of all salmon harvested in pollock directed fisheries and maximized retention of all catch on vessels opting into electronic monitoring. Collecting data needed for management relies on retention of all harvest so it can be sorted, weighed and sampled. Components that protect and strengthen the codend contribute to reducing unintentional tears, helps prevent loss of catch, and thus improves data collection onboard the vessels that NMFS uses for management purposes. Lost catch from torn net panels can contribute to unobserved mortality and decrease precision of catch estimates and total mortality.

Option 1 could lead to codend modifications in some instances that may change where the codend sits in the water column, if vessel operators were to respond to this regulatory clarification by changing the quantity of floats or metallic components attached to the codend. This may change hydrodynamic performance or reduce drag, which affects economic efficiency. However this would not change how the trawl net functions to catch fish and funnel fish into the codend, and is not expected to substantially change catch rates. Any changes to codend design would in theory be made to improve some aspects of fishing efficiency such as durability of the codend or hydrodynamic properties.

In comparison to the costs fishery participants would incur to comply with the regulatory status quo (see Section 4.1), fishery participants would benefit under Alternative 2, Option 1. BS pollock fishery participants and other pelagic trawl operators fishing in certain static closure areas would have full flexibility to innovate codend design to maximize functionality and safety. Furthermore, Option 1 would provide opportunities for vessel operators to choose the codend components and design that is safest for their crew and vessel. Safety of life at sea is of particular concern at the time the codend is being brought onboard the vessel.

4.2.2 Option 2: Remove outdated text

Under Alternative 2, Option 2, outdated regulatory text would be removed related to parallel line trawls. This option would remove the regulatory text at § 679.2 “authorized fishing gear”(14)(iii)(B), which states, “*Has no parallel lines spaced closer than 64 inches (162.6 cm) from all points on the fishing line, headrope, and breast lines and extending aft to a section of mesh, with no stretched mesh size of less than 60 inches (152.4 cm) extending aft for a distance equal to or greater than one-half the vessel's LOA*.”

When the pelagic trawl gear definition was proposed in 1993, fishing industry representatives emphasized that pelagic trawls were constructed to reduce drag during fishing operations by using large mesh openings or parallel lines behind the trawl opening. Mesh openings of at least one meter (3.3 feet) or parallel lines that are at least one meter apart accomplished the objective of reducing drag and also resulted in reduced bycatch of halibut and crab (58 FR 17196, April 1, 1993). The rationale for the adoption of parallel line trawls alongside large mesh pelagic trawls at the time is not detailed, and analysts can only speculate reasons for the gear variation becoming obsolete. Parallel lines may have tangled and twisted more readily than standard mesh pelagic trawls.

This option is not expected to affect current trawl operations because parallel line trawls are antiquated and no longer used in North Pacific fisheries. Removing the language in this text from regulations could reduce any confusion in interpreting regulations about parallel line trawls in relation to pelagic trawl gear and could improve clarity of the regulations for enforcement by removing obsolete text.

The motivations that existed in the early 1990s to retrofit nonpelagic trawl gear to game the system no longer exist under the fishery management programs in place today in the BS and GOA. The BS pollock fishery is a rationalized fishery and fishery participants no longer race to catch as much fish as possible in as short an amount of time. This fishery has been exclusively prosecuted using pelagic trawl gear since June 15, 2000 with the implementation of BSAI Amendment 57. Amendment 57 prohibited the use of nonpelagic trawl gear in the directed non-CDQ pollock fisheries of the BSAI (65 FR 31105, May 16, 2000). In the GOA rockfish and pollock fisheries, both pelagic and nonpelagic gear may be used to harvest these species. Rockfish are allocated to cooperatives under the Rockfish Program which allows vessel operators to coordinate the efficient harvest of allocated species within the cooperative. It is common for vessels operating in the GOA trawl fisheries to maintain and use separate pelagic and nonpelagic trawl nets depending upon the fishing conditions. For these reasons, it is unlikely that a vessel operator would take the time to modify non-pelagic gear in an attempt to retrofit it as a rope trawl like was seen in the early 1990s. This regulation is no longer limiting for the modern fleet and, if removed, could reduce unnecessary regulatory text.

Option 2 would not be expected to result in changes to fishing gear configuration nor have any quantifiable economic impacts, as rope trawls are an obsolete gear design and not currently in use and are unlikely to be used in the future. Should the gear variation reemerge, it would continue to be limited by the remaining provisions included in the definition of pelagic trawl gear. If Option 2 were adopted, parallel line trawls would no longer be prohibited for use in pelagic trawl fisheries. Instead of being limited to 64 inch spacings between parallel lines on the fishing line, headrope, or breast lines, pelagic trawl gear would be limited to text within § 679.2 “authorized fishing gear”(14)(iii)(A) stating, “Has no mesh tied to the fishing line, headrope, and breast lines with less than 20 inches (50.8 cm) between knots and has no stretched mesh size of less than 60 inches (152.4 cm) aft from all points on the fishing line, headrope, and breast lines and extending passed the fishing circle for a distance equal to or greater than one half the vessel's LOA”. Thus, parallel line spacings would be restricted from 60 inch spacings to 20 inch spacings on the fishing line, headrope, or breast lines.

4.2.3 Option 3: Allow use of flotation

Under Alternative 2, Option 3, flotation would be allowed aft of either the 5.5 inch stretched mesh (Suboption 1), or the 15 inch stretched mesh (Suboption 2). Use of flotation would continue to be limited forward of either the 5.5 inch stretched mesh or the 15 inch stretched mesh, dependent on the suboption selected. Neither of the suboptions would limit the total amount of flotation (in terms of pounds of aggregate buoyancy amount) that could be attached to the aft portion of the net as delineated by the mesh sizes stated in each suboption.

As noted in Section 2.2, the current language allowing for floats capable of providing up to 200 lb (90.7 kg) of buoyancy to accommodate the use of a net-sounder device would remain unchanged under Option 3.

The primary use of flotation in this section of the net is for function of bycatch excluder devices and in codends attached to pelagic trawl gear (see Section 4.2.1). Current regulations limiting flotation may be contrary to conservation goals of reducing bycatch, as flotation is often necessary to the design and proper function of bycatch excluder devices.

The changes required to allow use of the full suite of components that comprise bycatch excluder devices (flotation, metallic components, and instrumentation) are addressed by Alternative 2, Options 3, 4, and 5. Addressing bycatch excluder design components rather than creating a prescriptive regulatory definition of salmon bycatch excluders based on current designs allows for innovation that may lead to the development of better excluder devices. This is consistent with the approach taken in Amendment 110 to the BSAI Groundfish FMP, which mandated that IPAs require all vessels to use an excluder without detailing what type of excluder device to use (NMFS 2016a).

Because commonly used bycatch excluder design elements are addressed within separate options, selecting any of these options alone would not result in allowing the continued use of all bycatch excluder designs. Though flotation would be allowed to be attached to bycatch excluder devices installed aft of either 5.5 inch or 15 inch stretched mesh if Option 3 was chosen alone, other portions of those devices, such as cameras, lights, and metallic components in weighted "flapper" panels would continue to be restricted. Therefore, the impact of selecting Alternative 2, Option 3 alone would be similar to the impact of the no action alternative as it pertains to bycatch excluder devices, and would not meet the stated purpose and need for this action. A full description of the impacts of limiting bycatch excluder devices is detailed in Section 4.1.

The impacts of selecting Option 3, Suboptions 1 or 2 are analyzed in combination with selecting Option 4 and Option 5, Suboption 3(a) or Option 5, Suboption 3(b) below. Selecting Option 3 in combination with Option 4 and Option 5, Suboption 3(a) or Option 5, Suboption 3(b) would explicitly allow the continued use of bycatch excluder devices in the area of the net aft of 5.5 or 15 inch stretched mesh. Selecting these options in combination would also allow the continued use of current codend configurations attached to pelagic trawl gear containing flotation, metallic components, and sensor instruments.

Suboption 1

Option 3, Suboption 1 would allow flotation aft of the 5.5 inch stretched mesh, including codends attached to pelagic trawl gear. This suboption is more restrictive than Suboption 2 and does not cover all portions of the net that salmon bycatch excluders are currently commonly located in. While many salmon excluders are placed aft of 5.5 inch stretched mesh in pelagic trawl gear, some bycatch excluder devices are placed forward of the 5.5 inch stretched mesh. Gear operators using bycatch excluders forward of the 5.5 inch stretched mesh would need to retrofit their gear to comply under this suboption. Therefore, Suboption 1 may not meet the Council's purpose and need to clearly allow commonly used components in bycatch excluder devices, since this suboption would not allow these components in all currently used bycatch device configurations.

If placing bycatch excluder devices forward of the 5.5 inch stretched mesh is the most effective location for bycatch excluder devices in some pelagic trawl gear configurations, Suboption 1 may also result in indirect negative impacts for these vessels by reducing fishing efficiency, and reducing the effectiveness of bycatch excluder devices.

Limiting the use of flotation to the section of the net aft of the 5.5 inch stretched mesh could reduce the opportunities (outside of the EFP process) for vessel operators to experiment with, or use, bycatch excluder configurations that include flotation and are located forward of the 5.5 inch stretched mesh. To the degree that flotation is a necessary component of effective bycatch excluder devices, this could limit or stifle the development of bycatch excluder devices that rely upon flotation for effective operation in the forward portion of the net.

Suboption 2

Option 3, Suboption 2 would allow flotation aft of the 15 inch stretched mesh, including codends attached to pelagic trawl gear. This suboption is less restrictive than Suboption 1 and allows flotation to be placed further forward in the net. Suboption 2 would allow flotation to be attached in a broader area of the net including all portions of the net that salmon bycatch excluders are currently commonly located in.

Current salmon bycatch excluders are designed primarily for the escapement of Chinook salmon. Salmon bycatch excluders for chum salmon are planned to be tested under EFP 2025-01, which is focused on determining the best location for the new excluder in terms of creating an improved opportunity for chum salmon escapement while minimizing pollock loss. As described in the application, the applicant plans to start by testing the salmon excluder in aft sections of the net (likely 8 inch mesh) and move forward to larger mesh sections, no larger than 32 inch mesh. The EFP application noted that different configurations further forward in the net should better allow salmon to access the escapement portal(s) because there is

more room and less congestion for salmon to find their way to the exit portal as they move back through the net with the target catch. More information on this EFP is included in Section 1.3.1.

Although the experiments in the EFP have yet to be completed, the excluder designs and rationale in the application provide an example of the potential future limitations of Suboption 2 (and subsequently Suboption 1, which is more restrictive). Under Suboption 2, flotation would not be allowed in areas of the net that are currently being tested under this EFP. As noted in the EFP application, flotation might be needed to accomplish the desired function.

Analysts note that this suboption may result in limiting future opportunities for experimentation with the placement of flotation forward of 15 inch stretched mesh. Placement of bycatch excluders forward of 15 inch stretched mesh could still be tested through the EFP process under this suboption. Limiting the use of flotation to the section of the net aft of the 15 inch stretched mesh could reduce the opportunities (outside of the EFP process) for vessel operators to experiment with, or use, bycatch excluder configurations that include flotation and are located forward of the 15 inch stretched mesh. To the degree that flotation is a necessary component of effective bycatch excluder devices, this could limit or stifle the development of bycatch excluder devices that rely upon flotation for effective operation in the forward portion of the net.

4.2.4 Option 4: Allow instruments

Under Alternative 2, Option 4, instruments capable of observing, monitoring, or adjusting the fishing gear, catch, fishing activity, or fishing environment (including seafloor clearance) may be attached to any section of pelagic trawl gear. Floats, capable of providing up to 100 lb of buoyancy may be attached to or within 6 feet of each instrument.

As discussed in Section 4.1, net-sounder devices gather and convey data about the position and shape of the net, as well as the fish entering the net. Live feed cameras are a monitoring tool allowing the vessel operator to visually see what is passing by the camera lens, while flow sensors gather information about the flow of water through the net. Catch sensors are commonly mounted at various positions along and just forward of the codend and allow vessel operators to monitor codend fullness to know when to haul the net. This increases efficiency, reduces safety risks to crew and reduces loss of catch. Collectively, these technologies are all useful data collection tools.

Though there are many examples of potential instruments capable of observing or monitoring catch, fishing activity, or the fishing environment, it is less clear what types of instruments might be used to adjust the fishing gear. Analysts have assumed that the Council intends to at least allow adjustment of bycatch excluder devices. However, other than bycatch excluder devices it is unclear what other types of instruments might also fall into this category and what the effect might be of adjusting the fishing gear. Additional information may be necessary about the form and function of instruments to fully analyze whether there may be unintended consequences or additional impacts of allowing instruments that adjust the fishing gear, catch, fishing activity, or fishing environment under Option 4. As noted in Section 2.2.4, one example of an instrument used to adjust fishing gear is the active excluder device described by Dr. Craig Rose, which includes panel-moving devices and associated rigging used to manually manipulate a panel installed in the intermediate portion of the net as part of a bycatch excluder device. The impacts of allowing the use of instruments capable of manipulating or adjusting the performance of bycatch excluder devices would be consistent with existing management objectives.

In the AKR SFD's view, the current definition of pelagic trawl gear limits the use of technology that includes metallic components in the middle portion of pelagic trawl gear except for connectors and one net-sounder device. While Option 4 would allow other electronic instruments to be attached to any portion of pelagic trawl gear, it would not address the limiting components of paragraph (14)(viii) relating to other types of metallic components. Connectors, such as hammerlocks or swivels, would continue to be

allowed in all areas of a pelagic trawl. Consistent with AKR SFD's interpretation of the status quo regulations and under Option 4, connectors necessary to attach instruments would be allowed. Option 5, discussed in Section 4.2.5, discusses options that would clarify specifically where all other non-electronic metallic components are limited in pelagic trawl gear. **If all instruments that contain metal are also considered metallic components, the Council should specify how these two options should be interpreted to allow or limit the location of such instruments.**

Flotation Restrictions

The current regulatory language allows for floats capable of providing up to 200 lb (90.7 kg) of buoyancy to accommodate the use of a net-sounder device. **If the Council intends for net sounders to have a 100lb buoyancy limit, rather than retaining the current regulatory restriction of 200lb buoyancy, then that should be clarified.**

Option 4 explicitly limits the location and amount of flotation allowed to be used in conjunction with instrumentation. Floats may only be attached to or within 6 feet of each instrument, and may provide up to 100 lb of buoyancy. In public testimony at the October 2024, meeting industry stakeholders noted that 100 lb of buoyancy would likely be sufficient to offset the weight of instruments currently used on pelagic trawls. The option to allow flotation up to 100 lb (45.4 kg) buoyancy for instrumentation would provide ample flotation and neutral buoyancy (and thus, increased net efficiency) for commonly used instruments requiring flotation. For example, two third wire system trawl sonars currently available on the market are the Simrad FS70[19] and the WESMAR TCS785[20]. Although both devices add under 25 pounds of additional weight to trawl nets when submerged, deployment of these modern trawl sonars do not require any additional flotation because hydrodynamic forces keep the sonars on plane. As such, the 100 lb flotation limit would be more than enough to provide negative buoyancy. Older net sounder models still in use may require more flotation to operate effectively.

Under the regulatory status quo, only flotation providing up to 200 lb (90.7 kg) of buoyancy to accommodate the use of a net-sounder device is allowed under the definition of pelagic trawl gear (paragraph (14)(vi) of "authorized fishing gear" in § 679.2). The Council and NMFS limited flotation in the forward portions of the net to prevent the use of flotation in the headropes of pelagic trawl gear and disincentivize vessel operators from using large pelagic trawl nets in shallow water when midwater trawl doors were ineffective (58 FR 17196, April 1, 1993). The rule implementing the current definition focused on limiting flotation in the forward sections of pelagic trawl gear.

The language in Option 4 would allow flotation in any portion of the net, so long as it is attached within 6 feet of an instrument. This option does not put an upper bound on the number of instruments that may be attached to the net. Further, as Option 4 is framed, instruments need to be capable of achieving the stated goals, but would not necessarily be required to be functional. Therefore, a vessel could attach numerous "dummy," or non-functional, instruments to the net (along with the allowed flotation) for the purposes of floating the headrope. This is explicitly limited under the regulatory status quo, at paragraph (14)(vi). **If the Council intends to continue limiting this unintended use of flotation, the Council may want to provide input on how to restructure the buoyancy limitation in Option 4 in a way that would not allow flotation to be used in this manner.**

Flotation Restrictions under Option 4 and Option 3

Though both Option 4 and Option 3 allow for the use of flotation, there are notable distinctions in the limitations outlined in these options. Option 3 does not provide a set limit on the weight of buoyancy allowed, but limits the location that flotation may be attached to either a) aft of 5.5 inch stretched mesh, or b) aft of 15 inch stretched mesh. Option 4 provides a set limit of 100 lb of buoyancy per instrument, and

[19] https://www.kongsberg.com/discovery/fish-finding/fishery-sonars/simrad-fs70/#key-features
[20] https://www.wesmar.com/commercial-fishing-trawl-sonar

limits the location that flotation may be attached in relation to attached instruments, rather than limiting flotation to a certain section of the net. Under Option 4, flotation may be placed anywhere on the net, so long as there is a compliant instrument secured within 6 feet of this flotation.

Option 3, compared to Option 4, does not require flotation to be attached within 6 feet of instrumentation. Under Option 3, floats may be attached to a portion of the net that does not have an instrument within 6 feet, so long as the floats remain aft of 5.5 inch stretched mesh (Suboption 1), or 15 inch stretched mesh (Suboption 2). This is consistent with the designs of commonly used bycatch excluder devices. For example, double panel, or over and under excluder designs, require floats to be attached to the lower flapper, or ramp, to raise that section of the net and create a "lee" with the net panel. If Option 3 is selected in combination with Option 4 and instrumentation is attached within 6 feet of floats, and installed aft of 5.5 or 15 inch stretched mesh, Analysts assume that these floats would not be subject to the 100 lb buoyancy limitation applicable elsewhere in the net under Option 4.

The added utility of Option 4, compared to Option 3, is that it allows for flotation to be attached to any area of the net where instruments are attached. This is reflective of how instrumentation (such as net-sounder devices and instrumentation used in bycatch excluder devices) is commonly attached to the trawl. As shown in Figure 3-1, net sounder devices or sonar are commonly attached to the forward dorsal portion of the net. Option 4 would explicitly allow for flotation to be attached within 6 feet of the instrument, no matter where on the net this instrument is attached.

Advantages of Allowing Additional Technology

Data collection is a common theme representing the technologies in the Council's motion. Option 4 would explicitly allow current technology vital to fishing efficiency to be attached to the net. These technologies are effectively not allowed under Alternative 1, given the current regulatory limitation, and that the location where instruments could be placed on the pelagic trawl gear is limited by the metallic components provision. Option 4 could also provide enough flexibility to allow future innovative technologies to be attached to trawls, as long as these instruments support the goals mentioned in the option.

Information collected by instrumentation allowed under this option could be used for a variety of purposes, including to inform the vessel captain as they make real-time decisions, to better understand how the gear functions, or to better understand gear impacts to the environment. By revising the definition of pelagic trawl gear to allow the use of such technology, this could allow commonly used instruments (e.g., catch sensors and net sounders or transducers) to be used and allow for these data to continue to be collected. It could also allow implementation of new technologies developed without the need for an EFP. There could be various indirect economic benefits depending on the scope of acceptable technologies attached to the net using this hardware; whether for scientific research purposes to better sense and understand bottom contact and impacts, improve net efficiency purposes through better awareness of how and where the net is fishing in the water column, or even future bycatch reduction technologies. Allowing the use of technology that monitors or gathers data regarding the movement and performance of a pelagic trawl gear is necessary for the effective operations of pelagic trawl gear and continued improvements under changing conditions.

The distribution of the economic impacts of Option 4 primarily relies on a vessel operator's choice, need and ability to purchase additional technologies. Catch sensors and net sounders or transducers have become vital components of modern trawl fleets, and many entities may not opt to purchase additional equipment.

4.2.5 Option 5: Allow the use of metallic components

Option 5 considers allowing the use of metallic components in the forward, middle, and/or aft portions of the net depending on which suboptions are chosen. The suboptions may be selected individually or in any combination:

Suboption 1: Forward of the fishing circle.
Suboption 2: Aft of the fishing circle and forward of:
a) 5.5 inch stretched mesh, or
b) 15 inch stretched mesh.
Suboption 3: Aft of:
a) 5.5 inch stretched mesh, or
b) 15 inch stretched mesh.

For ease of reference, Suboption 1 is referred to as addressing the "forward" section of the net, Suboption 2 addresses the "middle" section of the net, and Suboption 3 addresses the "aft" section of the net. Suboption 2(a), or Suboption 3(a), would delineate the 5.5 inch stretched mesh as the boundary between the middle and aft portions of the net. Suboption 2(b) and Suboption 3(b) delineate the 15 inch stretched mesh as the boundary between the middle and aft portions of the net.

The term "metallic components" used in Option 5 could encompass a wide array of commonly used elements that are made of or may contain metal, and the impacts of selecting suboptions within Option 5 differ by the type of metallic component allowed in each section of the net. For example, the Council may wish to allow connectors in all areas of the net (*e.g.,* selecting all suboptions), but limit components like weights and chains to certain portions of the net (e.g., leaving one or more suboption unselected). To maintain the full range of options (including limiting or allowing specific types of metallic components) available to the Council to select as part of its preferred alternative, analysts have considered allowing the following categories of metallic components in each of the areas identified in the suboptions:

1) electronic instruments that contain metal (*e.g.,* net-sounder devices, cameras, electronic sensors),
2) connectors (*e.g*., hammerlocks and swivels), and
3) non-electronic metallic components (*e.g.,* chains, weights, weighted panels)

The impacts of selecting suboptions within Alternative 2, Option 5 are analyzed by type of metallic component in comparison to the status quo alternative. Within this analysis, the regulatory status quo (Alternative 1) reflects the AKR SFD interpretation of paragraph (14)(viii). **The AKR SFD concludes that paragraph (14)(viii) limits the use of metallic components in the middle portion of the net, but allows their use elsewhere on the net. That is, metallic components are allowed in the forward portion of the net (forward of the fishing circle) and the aft portion of the net (aft of 5.5 inch (14.0 cm) stretched mesh).** Further, this prohibition on metallic components on the middle of the net contains two exceptions. Connectors (e.g., hammerlocks and swivels) and one net-sounder device are allowed between 5.5 inch (14.0 cm) stretched mesh and the fishing circle.

The regulatory language defining authorized fishing gear at paragraph (14)(viii) is somewhat unclear, and NMFS noted in the February 2024 discussion paper that this regulatory language is open to multiple different interpretations and thus creates ambiguity. Option 5 could clarify this regulation, and remove the ambiguity in the current language. **Further clarity could be provided by using a different term other than "metallic components," which as explained further below could encompass a wide range of components. The Council could specify what types of metallic components (or what types of gear modifications) they would specifically like to limit in each portion of the net.**

The following sections analyze the impacts of allowing each of the three types of metallic components in the three areas of the net identified by the suboptions under Option 5.

1) Electronic instruments that contain metal

Because the current definition of pelagic trawl gear provides an exception for a net sounder device from the restrictions that otherwise apply to metallic components, analysts assume that electronic instruments containing metal are a type of metallic component. Thus, electronic instruments that contain metal are limited to the forward portion of the net (forward of the fishing circle) and aft portion of the net (aft of 5.5 inch stretched mesh) under AKR SFD's interpretation of the current regulatory definition. An exception is made for a net sounder, which is allowed in any portion of the net. As discussed in Section 4.1, a net-sounder device, often mounted at or near the headline of the trawl net, is defined in § 679.2 as a "sensor used to determine the depth from the water surface at which a fishing net is operating." Modern net sonar devices using multiple element transducers have largely replaced net-sounder devices. While net sounders allow net monitoring and visualization within a single plane, newer net sonars allow visualization of "slices" of the area in front of the net as well as distance from the water surface or seabed by transmitting vertically and horizontally along multiple planes.

Current gear configurations commonly use electronic instruments vital to fishing efficiency in various locations of the net. There are many examples of potential instruments that may be attached to the fishing gear under Option 5, including but not limited to depth and temperature sensors, catch sensors, net-sounders, doorspread sensors, trawl warp measurement sensors, and bottom contact sensors. Under the operational status quo, catch sensors are commonly mounted at various positions along and just forward of the codend. These devices allow vessel operators to monitor codend fullness to know when to haul the net, which increases efficiency, reduces safety risks to crew and reduces loss of catch. Collectively, these technologies are all useful data collection tools. Other electronic instruments, like live feed cameras and lights, would also be included in this category. Bycatch excluder designs commonly include both live feed cameras and lights, as described further in Section 3.2.3. Live feed cameras are a monitoring tool that allow the vessel operator to visually see what is passing by the camera lens, while flow sensors gather information about the flow of water through the net. Option 5 could also provide enough flexibility to allow future innovative technologies to be attached to trawls.

Information collected by instrumentation allowed under this option could be used for a variety of purposes, including to inform the vessel captain as they make real-time decisions, to better understand how the gear functions, or to better understand gear impacts to the environment. By revising the definition of pelagic trawl gear to allow the use of such technology, this could allow commonly used instruments (e.g., catch sensors and net sounders or transducers) to be used and allow for these data to continue to be collected. It could also allow implementation of new technologies developed without the need for an EFP. There could be various indirect economic benefits depending on the scope of acceptable technologies attached to the net using this hardware; whether for scientific research purposes to better sense and understand bottom contact and impacts, improve net efficiency purposes through better awareness of how and where the net is fishing in the water column, or even future bycatch reduction technologies. Allowing the use of technology that monitors or gathers data regarding the movement and performance of a pelagic trawl gear is necessary for the effective operations of pelagic trawl gear and continued improvements under changing conditions.

Though both Option 4 and Option 5 would allow electronic instruments to be attached to the net, there are several distinctions between the options.

1) Function of instrument: Option 4 requires that instruments support the goals defined in the option (instruments must be capable of observing, monitoring, or adjusting the fishing gear, catch, fishing activity, or fishing environment). Option 5 allows any electronic instrument to be attached to pelagic trawl gear, and does not include a requirement based on their function.

2) Flotation: Option 4 allows flotation, providing up to 100lb of buoyancy, to be attached within 6 feet of each instrument. Option 5 does not provide any flotation allowances. If an instrument required flotation, the gear operator could attach this instrument to a section of the net with no flotation restrictions.
3) Location-based Restrictions: Option 4 does not include any language that would restrict instruments from being attached to a specific portion of the net. Option 5 includes a list of suboptions that would allow or restrict instruments from being attached to certain sections of the net, depending on the combination of suboptions that were selected (and assuming the Council intends for the term 'metallic components' to include all electronic instruments that contain metal).

If the Council selects Option 4 (to allow instruments and flotation to offset instruments anywhere on pelagic trawl gear) in combination with Option 5, the Council could specify how these two options should be interpreted to allow or limit the location of such instruments. The location that electronic instruments may be attached would be defined by the suboptions selected under Option 5, if the Council intends for instruments to be considered as metallic components. Flotation providing up to 100lb of buoyancy could be attached within 6 feet of each instrument, consistent with Option 4. The Council may wish to specify whether they intend to limit the function of attached instruments (as defined in Option 4), or allow any electronic instrument to be attached to pelagic trawl gear in specified locations (reflecting Option 5). The Council could also recommend a definition of metallic components that would exclude electronic instruments or other components that contain metal but are largely made of other materials. If the Council does not intend instruments to be considered under the umbrella of metallic components, then that should be clarified. As noted within Section 2.2.4, additional information may be necessary regarding the form and function of instruments that might be used to adjust the fishing gear for other purposes, or instruments that would not support the goals defined in Option 4, to fully analyze potential impacts.

2) Connectors

The current regulatory language in paragraph (14)(viii) of the pelagic trawl gear definition states that a pelagic trawl, "Has no metallic component except for connectors (e.g., hammerlocks or swivels) or a net-sounder device aft of the fishing circle and forward of any mesh greater than 5.5 inches (14.0 cm) stretched measure." This regulatory language allowing the use of connectors is somewhat unclear, and NMFS noted in the February 2024 discussion paper that this regulatory language could be interpreted in multiple ways. The AKR SFD interpretation of this language allows metallic connectors anywhere on pelagic trawl gear. Within this analysis, the regulatory status quo (Alternative 1) reflects the AKR SFD interpretation that connectors are allowed anywhere on pelagic trawl gear.

Under Option 5, there is no obvious exception for connectors from the limits that would otherwise apply to metallic components. Thus, under Option 5, connectors such as hammerlocks and swivels would be allowed in specific portions of the net, depending on the suboption/s selected. If the Council selected Suboptions 1-3 for connectors, that would be consistent with the AKR SFD interpretation of the current regulatory language and reflect the operational status quo. Connectors are commonly used components of pelagic trawl gear used throughout the net, including for repairing mesh on pelagic trawl nets. Allowing connectors to be located on all areas of the net (by selecting Option 5, Suboptions 1-3) would be consistent with how the current regulatory language has been interpreted, and with current configurations of pelagic trawl gear.

3) Non-electronic metallic components

Per the AKR SFD interpretation of the regulatory language at paragraph (14)(viii), the regulatory status quo allows any metallic components to be attached forward of the fishing circle or aft of the 5.5 inch stretched mesh. Selecting Suboption 1 and Suboption 3(a) would be consistent with the regulatory status quo for these components. Suboption 3(b) would expand the location where metallic components are

allowed to include the area aft of 15 inch stretched mesh, which has implications for metallic components used in bycatch excluder devices as discussed in more detail below. In establishing the existing regulatory definition, limiting the use of metallic components in the middle portion of the net served as a way to prevent reconfigured nonpelagic trawls from complying with the definition of pelagic trawl gear while remaining capable of being fished as a nonpelagic trawl. At that time, this type of net reconfiguration was achieved by attaching weighted metallic components, such as additional footropes or chains, to the middle section of the net (aft of the fishing circle, and forward of the 5.5 inch stretched mesh).

The category non-electronic metallic components is a catch-all that includes any metallic components that do not fit into the prior categories. The term "metallic components" is fairly ambiguous, but analysts assume the Council is focused on limiting the use of metallic components that have the potential to weigh down portions of the net or cause the gear to operate more like nonpelagic trawl gear, as was the focus when the definition of pelagic trawl gear was last updated in 1993. Commonly used non-electronic metallic components that may serve to weigh down the net (or a portion of the net) include chains, weights, weighted panels, footropes, clump weights, trawl doors, and weighted panels on salmon excluder devices.

However, we note that because the term "metallic components" is rather broad, it could also capture other components that are primarily made of non-metallic materials, but contain some amount of metal. These components would likely provide little, if any, negative buoyancy to a trawl net, and could not be used as weights. One example of a material that would fit under this category are lines made with metal filaments or with a metal core. This material is commercially available for use in manufacturing pelagic trawl gear. It is unknown the extent to which this material is used in the impacted fisheries, and which sections of the net this material may be located in. Depending on the suboptions chosen, operators may be limited to using this material (among other non-electronic metallic components) to the sections of the net allowed for weighted metallic components if all non-electronic metallic components are regulated in the same manner. In selecting suboptions under Alternative 2, Option 5, the Council may want to clarify what it intends to regulate as "metallic components," as otherwise there may be some ambiguity as to whether components with any traces of metal could be subject to restrictions in a revised definition of pelagic trawl gear.

Given this original rationale behind limiting the use of metallic components, it does not appear that the intent was to limit the use of webbing, riblines or other netting that may contain some metal but are largely made of materials other than metal. Restricting components that contain some metal but do not weigh down a trawl net when attached or used in certain sections of the net would serve no obvious conservation or management purpose. **Therefore, the Council may not want to treat these materials in the same manner as heavy weighted materials like chains. If so, the Council may wish to provide further clarification on exactly which components that are made of metal or contain metal are allowed in which portions of the net, to ensure this action accomplishes its goal of providing clarity and regulatory certainty.**

As described below, non-electronic metallic components are commonly located in various parts of the net, depending on their function. Suboptions under Option 5 would allow different combinations and uses for these commonly used metallic components, depending on which suboption/s may be selected.

Common non-electronic metallic components (e.g. footropes, chains, and clump weights)

Suboption 1 would allow metallic components forward of the fishing circle. This is consistent with the SFD's interpretation of the status quo definition. Suboption 1 would not change how many weighted lines are allowed on the bottom of the trawl. Therefore, this suboption would not allow for metal footrope modifications such as those currently being tested under EFP 2024-02 (see Section 1.3.1 for more information), which require a partial exemption from paragraph (14)(vii) of "authorized fishing gear" in §

679.2. As innovation continues, it is likely that elements of future pelagic trawl footrope modifications, including designs being tested in the noted EFP, would be out of compliance under Suboption 1. However, the results of this gear modification are not yet available. The Council is concurrently pursuing potential options to incentivize pelagic trawl gear innovation (see Section 1.3.2 for more information) with one of the objectives being to minimize the impacts of pelagic trawl gear on sensitive benthic habitat and unobserved mortality of stocks that rely on such habitat. Because the footrope is the widest part of the trawl net that is known to contact the seafloor, innovations in footrope modifications are within the scope of that action.

Suboption 2 would broadly allow use of metallic components in the middle portion of pelagic trawl gear. This suboption is not consistent with the regulatory status quo, nor with common gear configurations under the operational status quo. Attaching heavy metallic components within the middle portions of pelagic trawl gear is not allowed in current regulation, and is not practiced by industry. Attaching additional metallic components within this section of pelagic trawl gear has the potential to weigh down the "belly" of the net and, depending on the depth where the net is deployed, increase impacts on seafloor habitat. Regulatory limitations regarding the footrope and fishing line would remain in place forward of the fishing circle under Suboption 2, but there may be no clear restriction against adding additional metal chains aft of the fishing circle under this suboption. Although there is less incentive for entities to reconfigure their gear in this way than existed in the early 1990s, selecting Suboption 2 as to non-electronic metallic components opens the door for these types of configurations to re-appear. As described in Section 2.1, NMFS's original rationale for limiting the use of metallic components on pelagic trawl gear in paragraph (14)(viii) was to prevent reconfigured nonpelagic trawls from complying with the definition of pelagic trawl gear, while remaining capable of being fished as a nonpelagic trawl. Suboption 2 does not reflect this rationale. If the Council recommends allowing the unrestricted attachments of any type of metallic components under Suboption 2 (as opposed to only allowing instruments and connectors), and recommends removal of regulatory language that prohibits the use of parallel line trawls (Option 2), then it could be possible to see the re-emergence of this type of retro-fitted nonpelagic gear used as pelagic trawl gear.

Suboption 3(a) (allowing metallic components aft of 5.5 inch stretched mesh) reflects the regulatory status quo for weighted metallic components (*e.g.*, chain riblines) in the aft portion of pelagic trawl gear and in attached codends. Chain riblines are commonly used metal components in modern pelagic trawl gear (especially in the codend). As shown in Figure 3-1, riblines are commonly located across the entire length of the net. These riblines are commonly made of either chain, wire, or heavy rope. Chain riblines are commonly used to reinforce the codend.

Metallic components used in bycatch excluder devices

Bycatch excluder devices commonly use metallic components (such as weighted "flapper" panels) as well as electronic instrumentation and flotation. Weighted metallic components are used in over/under bycatch excluder devices to weigh down a panel of the net and allow for salmon escapement. The weights are small (relative to the entire net) and do not function to weigh down the middle portion of the net. Though these metallic components provide negative buoyancy to a panel of the net, they are designed to maintain water flow through the net in such a way that facilitates the escapement of salmon and the retention of pollock.

Per AKR, SFD's interpretation of the regulatory language at paragraph (14)(viii), current regulations limit the use of metallic components to the forward portion of the net (forward of the fishing circle, Suboption 1) and the aft portion of the net (aft of 5.5 inch stretched mesh, Suboption 3(a)). Under the operational status quo, metallic components used in bycatch excluder devices are typically attached aft of the 15 inch stretched mesh (consistent with Suboption 3(b)), meaning some bycatch excluder device configurations are in conflict with the current regulatory definition. No components of bycatch excluder devices that are commonly used in current gear configurations are attached forward of 15 in stretched mesh, so Suboption

1 and Suboption 2(b) would have no impact on the use of metallic components in bycatch excluder devices. Selecting Suboption 3(b) would allow the use of metallic components in any current bycatch excluder device configurations. However, selecting Suboption 3(a), and either selecting nothing under Suboption 2 or selecting Suboption 2(b), would prevent continued use of metallic components in bycatch excluder devices forward of 5.5 in stretched mesh but aft of 15 in stretched mesh.

Suboption 3(a) would allow metallic components aft of the 5.5 inch stretched mesh. Analysts note that Suboption 3(a) may not meet the Council's purpose and need to clearly allow commonly used components in bycatch excluder devices, since this suboption would not allow all currently used bycatch device configurations. While most salmon excluders designed to allow escapement of Chinook salmon are generally placed aft of 5.5 inch stretched mesh in pelagic trawl gear, vessels using bycatch excluder devices forward of the 5.5 inch stretched mesh may need to retrofit their gear to be in compliance under this suboption. If placing bycatch excluder devices forward of the 5.5 inch stretched mesh is the most effective location for these devices, Suboption 3(a) may also result in indirect negative impacts for these vessels by reducing fishing efficiency and reducing the effectiveness of bycatch excluder devices.

Suboption 3(b) would allow metallic components aft of the 15 inch stretched mesh, consistent with the operational status quo. This suboption is less restrictive than Suboption 3(a) and allows metallic components to be placed further forward in the net. Suboption 3(b) would not require any operators to reconfigure their gear to comply.

Though the economic impact of Suboption 3(b) is expected to be positive when compared to the regulatory status quo, this suboption could limit the use of metallic components to the section of the net aft of the 15 inch stretched mesh and reduce opportunities (outside of the EFP process) for vessel operators to experiment with or use bycatch excluder configurations forward of the 15 inch stretched mesh. See Section 4.2.3 for additional detail on this topic. This could reduce future opportunities to innovate bycatch excluder devices, which would limit the potential benefits of this suboption as they relate to allowing bycatch excluder device innovation.

4.3 Affected Small Entities (Regulatory Flexibility Act Considerations)

Section 603 of the Regulatory Flexibility Act (RFA) requires that an initial regulatory flexibility analysis (IRFA) be prepared to identify whether a proposed action will result in a disproportionate and/or significant adverse economic impact on the directly regulated small entities, and to consider any alternatives that would lessen this adverse economic impact to those small entities. NMFS prepares the IRFA in the classification section of the proposed rule for an action. Therefore, the preparation of a separate IRFA is not necessary for the Council to recommend a preferred alternative. This section provides information about the directly regulated small entities that NMFS will use to prepare the IRFA for this action if the Council recommends regulatory amendments.

This section also identifies the general nature of the potential economic impacts on directly regulated small entities, specifically addressing whether the impacts may be adverse or beneficial. The exact nature of the costs and benefits of each alternative is addressed in the impact analysis sections of the EA/RIR and is not repeated in this section, unless the costs and benefits described elsewhere in the EA/RIR differ between small and large entities.

4.3.1 Identification of Directly Regulated Entities

For RFA purposes only, NMFS has established a small business size standard for businesses, including their affiliates, whose primary industry is commercial fishing (see 50 CFR 200.2). A business primarily engaged in commercial fishing (NAICS code 11411) is classified as a small business if it is independently owned and operated, is not dominant in its field of operation (including its affiliates) and has combined annual receipts not in excess of $11 million for all its affiliated operations worldwide. A shoreside and mothership processor primarily involved in seafood processing (NAICS code 311710) is classified as a small business if it is independently owned and operated, is not dominant in its field of operation (including its affiliates), and has combined annual employment, counting all individuals employed on a full-time, part-time, or other basis, not in excess of 750 employees for all its affiliated operations worldwide.

4.3.2 Count of Small, Directly Regulated Entities

This action will directly regulate participants in the BSAI and GOA Trawl fisheries. This includes entities operating vessels with groundfish federal fisheries permits (FFPs) catching FMP groundfish using pelagic trawl gear in Federal waters (including those receiving direction allocations of groundfish). In 2022 (the most recent year of complete data), there were 135 individual CVs and CPs with gross revenues less than or equal to $11 million as well as 6 CDQ groups. This represents the potential suite of directly regulated small entities. In the BSAI, this includes an estimated 130 small CV and 2 small CP entities in the groundfish sector. The determination of entity size is based on vessel revenues and affiliated group revenues. This determination also includes an assessment of fisheries cooperative affiliations, although actual vessel ownership affiliations have not been completely established. However, the estimate of these 130 CVs may be an overstatement of the number of small entities. This latter group of vessels had average gross revenues that varied by gear type. Average gross revenues for trawl CVs are estimated to be $2.7 million annually. Average gross revenues for CP entities are confidential. There are three AFA cooperative affiliated motherships, which appear to fall under the 750-worker threshold and are therefore small entities. The average gross revenues for the AFA motherships are confidential.

In 2022 (the most recent year of complete data), there were 677 individual CVs and CPs with gross revenues less than or equal to $11 million operating in the GOA. This represents the potential suite of directly regulated small entities. This includes an estimated 674 small CV and 3 small CP entities in the GOA groundfish sector. The determination of entity size is based on vessel revenues and affiliated group revenues. This determination also includes an assessment of fisheries cooperative affiliations, although actual vessel ownership affiliations have not been completely established. However, the estimate of these 677 CVs and CPs may be an overstatement of the number of small entities. The CVs had average gross revenues that varied by gear type. Average gross revenues for trawl gear CVs are estimated to be $1.38 million, respectively. Trawl gear CP entity revenue data are confidential.

4.3.3 Impacts to Small, Directly Regulated Entities

The purpose of this action, depending on which alternative and options are ultimately chosen, is to allow commonly used components in codends and bycatch excluder devices, allow instrumentation necessary to monitor and adjust net performance, and remove unnecessary outdated text. The alternatives and associated options would generally “allow” industry to adapt rather than requiring gear modifications beyond what is currently in use to comply with the new definition. As such, this action is not expected to create significant negative effects on a substantial number of directly regulated small entities.

4.4 Alternatives with Respect to Net Benefit to the Nation

This section uses qualitative methods to estimate the potential net benefit of the action on the Nation, relative to the no action baseline. The impacts of all the alternatives, options, and suboptions are discussed broadly, and this section will be revised to reflect the Council's preferred alternative after additional input from the public and advisory bodies.

The overarching policy goals in the suite of options under the action alternative include provisions to provide greater flexibility to the BS pollock fleet and GOA trawl vessels using pelagic trawl gear in areas closed to nonpelagic gear to avoid salmon bycatch, improve operational efficiency, and provide regulatory clarity. Although provisions in the suite of options under the action alternative would benefit entities and individuals operating pelagic trawl gear, none of these options would noticeably affect production from pelagic trawl fisheries. This action would not result in a substantial change in any of the following: fishing location, timing, effort, or harvest levels.

A minor overall net benefit to the Nation is likely to arise from this action. The action alternative is likely to increase or maintain fishing efficiency for pelagic trawl gear users by providing the flexibility needed to modify gear for optimal efficiency and to achieve the conservation and management goal of reducing bycatch, which could benefit all resource users. In particular, salmon that are bycaught in the trawl fishery are identified as PSC by regulation. Any reduction in salmon PSC will be beneficial for rebuilding salmon stocks with the goal of achieving a harvestable surplus in the future. Such harvestable surpluses may benefit subsistence, commercial, personal use, sport charter, and sport harvesters within Alaska, Washington, Oregon, and potentially California.

This action would have no direct impact on processors or consumers because the action does not affect allocations of fishery resources or locations of landings nor would the action have direct effects on markets for fishery resources.

5 Environmental Impacts

This chapter evaluates the potentially affected environment and the degree of the effects of Alternatives 1 and 2, as well as associated options, on identified resource components together with relevant past, present, and reasonably foreseeable actions.

Recent and relevant information, necessary to understand the affected environment for each resource component, is summarized in the relevant section below. For each affected resource component, the analysis identifies the potential impacts of each alternative, and evaluates the significance of these impacts. If significant impacts are likely to occur, preparation of an Environmental Impact Statement (EIS) is required. Although an EA should evaluate economic and social impacts that are interrelated with natural and physical environmental effects, economic and social impacts by themselves are not sufficient to require the preparation of an EIS. Economic and social impacts are analyzed in Chapter 4.

5.1 Methods for Environmental Impact Analysis

5.1.1 Documents Incorporated by Reference

This section relies heavily on the information and evaluation contained in previous environmental analyses, and these documents are incorporated by reference. The documents listed below contain information about the fishery management areas, fisheries, marine resources, ecosystem, social, and economic elements of the groundfish fisheries. They also include comprehensive analysis of the effects of the fisheries, including those using pelagic trawl gear, on the human environment and are referenced throughout this section.

Final Environmental Impact Statement / Regulatory Impact Review for Proposed Amendment 91 to the FMPs for Groundfish of the Bering Sea / Aleutian Islands Management Area: Bering Sea Chinook Salmon Bycatch Management Final Environmental Impact Statement (NMFS 2009) Amendment 91 was implemented in 2011 for the BS pollock fishery (75 FR 530256, August 30, 2010) by establishing a Chinook PSC limit requiring the BS pollock fishing to cease when an entity reaches their portion of the limit. The Chinook PSC limit and industry led incentive plan agreements combined with a performance standard and annual threshold to keep the fishery below the overall cap. The program was designed to minimize bycatch to the extent practicable in all years, and prevent bycatch from reaching the limit in most years, while providing the pollock fleet with the flexibility to harvest the total allowable catch. This management approach is intended to ensure the individual sectors stay below their actual Chinook PSC apportionments by incentivizing that behavior to receive the highest apportionment of Chinook salmon PSC available each year This document is available from: https://repository.library.noaa.gov/view/noaa/3853.

Final Environmental Assessment / Regulatory Impact Review / Initial Regulatory Flexibility Analysis for Amendment 93 to the FMP for Groundfish of the GOA: Chinook Salmon PSC in the GOA pollock fishery (NMFS 2012) This document is an Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis analyzing proposed management measures that would apply exclusively to the directed pollock fishery in the Western and Central GOA. The measures under consideration include setting PSC limits in the Central and Western GOA for Chinook salmon (Oncorhynchus tshawytscha), which would close the directed pollock fishery in those regulatory areas once attained; full retention of salmon species; and increased observer coverage on vessels under 60 feet length overall. The purpose of this action is to address PSC of Chinook salmon in the GOA, and establish measures that protect against the risk of high Chinook salmon removals in the GOA pollock trawl fisheries in future years. This document is available from: https://repository.library.noaa.gov/view/noaa/22951

Environmental Assessment/Regulatory Impact Review/Final Regulatory Flexibility Analysis for Amendment 97 to the FMP for Groundfish of the Gulf of Alaska Chinook Salmon Prohibited Species Catch in the Gulf of Alaska Non-Pollock Trawl Fisheries (NMFS 2015)
This EA/RIR/IRFA analyzes proposed management measures applying to all groundfish trawl fisheries in the Central and Western GOA, except the directed pollock fishery. The measures under consideration include setting PSC limits in the Central and Western GOA for Chinook salmon (*Oncorhynchus tshawytscha*), which would close fisheries in those regulatory areas once attained, and full retention of all salmon species. Implementation of the management measures evaluated in this analysis would require an amendment to the Fishery Management Plan for Groundfish of the GOA (GOA Groundfish FMP), as well as amendments to implementing regulations. This document is available from: https://repository.library.noaa.gov/view/noaa/23218

Final Environmental Analysis / Regulatory Impact Review for Proposed Amendment 110 to the FMP for Groundfish of the BSAI Management Area: Bering Sea Chinook Salmon Bycatch Management Measures (NMFS 2016a) In 2016, Amendment 110 was implemented to improve the management of Chinook and chum salmon bycatch in the BS pollock fishery by creating a comprehensive salmon bycatch avoidance program. This action was necessary to minimize Chinook and chum salmon bycatch in the BS pollock fishery while maintaining the potential for the full harvest of the pollock total allowable catch within specified PSC limits. This document is available from: https://repository.library.noaa.gov/view/noaa/15501

Final Environmental Assessment/Regulatory Impact Review for Proposed Amendment 111 to the FMP for the Gulf of Alaska: Central Gulf of Alaska Rockfish Program Reauthorization (NMFS 2020) This Environmental Assessment/Regulatory Impact Review analyzes proposed management measures that would apply to the Central GOA Rockfish Program fisheries. The measures under consideration include reauthorizing the RP by either removing the sunset date or establishing a new sunset date within a range of 10 through 20 years. The environmental analysis focuses primarily on target stocks, Chinook salmon and Pacific halibut, and EFH. The document is available from: https://repository.library.noaa.gov/view/noaa/27232.

Endangered Species Act (ESA) Section 7(a)(2) Biological and Section 7(a)(4) Conference Opinion FMP for the Groundfish fisheries of the Gulf of Alaska (NMFS 2024a) This biological opinion considers the effects of the groundfish fisheries managed under the GOA FMP to listed and proposed species and critical habitat. Details regarding why the reinitiation is warranted and why NMFS elected to consult separately on the GOA and BSAI groundfish fisheries are described below in the background section. A forthcoming consultation will consider the effects of the groundfish fisheries under the BSAI FMP to listed species and critical habitat. This document is available from: https://repository.library.noaa.gov/view/noaa/66786

Final Environmental Assessment/Regulatory Impact Review for Proposed Amendment 126 to the FMPs for Groundfish of the Bering Sea / Aleutian Islands Management Area and Proposed Amendment 114 to the FMP for Groundfish of the Gulf of Alaska (NMFS 2024b). The Trawl EM EA analyzed proposed management measures that would apply exclusively to pollock CVs using pelagic trawl gear and tender vessels in the GOA and BSAI management areas under the North Pacific Observer Program. This EA analyzes proposed management measures applying exclusively to pollock CVs using pelagic trawl gear and tender vessels in the North Pacific Observer Program. The measures analyzed include alternatives that would allow an electronic monitoring (EM) system to supplement existing observer coverage. The purpose of this action was to advance cost efficiency and compliance monitoring through improved salmon accounting and reduced monitoring costs. The document is available from: https://www.fisheries.noaa.gov/s3/2024-01/0648-BM40-Trawl-EM-Analysis.pdf

Preliminary Draft Environmental Impact Statement for Proposed Amendment to the FMP for Groundfish of the Bering Sea/Aleutian Islands Management Area: Bering Sea Chum Salmon Bycatch Management (NPFMC 2025) This Preliminary Draft Environmental Impact Statement (DEIS) analyzes proposed management measures to minimize chum salmon (*Oncorhynchus keta*) bycatch in the BS pollock (*Gadus chalcogrammus*) fishery. The purpose of this action is to minimize chum salmon bycatch in the BS pollock fishery, with a particular focus on chum salmon of Western Alaska origin, consistent with the Magnuson-Stevens Fishery Management and Conservation Act, its National Standards, and other applicable law. The preliminary DEIS addressed potential impacts to chum salmon PSC, Chinook salmon PSC, herring PSC, marine mammals, seabirds, habitat, as well as ecosystem and climate. The report is available from: https://meetings.npfmc.org/CommentReview/DownloadFile?p=1224cfc2-d9db-4e2a-ab63-61c416debd13.pdf&fileName=C2%20Bering%20Sea%20Chum%20Salmon%20Bycatch%20Management%20Analysis.pdf.

5.1.2 Resource Components Addressed in the Analysis

This section evaluates the impacts of the alternatives and options on resource components found in the environment affected by the action. The social and economic impacts of this action are described in detail in the RIR (Chapter 4).

Recent and relevant information, necessary to understand the affected environment for each resource component, is either referenced where applicable or summarized in the relevant subsections below. For each resource component, the analysis identifies the potential impacts of each alternative, and uses criteria to evaluate the significance of these impacts. Resource components of the human environment that *could* potentially be affected by the proposed action and alternatives include:

- groundfish
- prohibited species
- ecosystem component species
- marine mammals
- seabirds
- habitat
- ecosystem
- social and economic resources (*discussed in Chapter 4*)

Although this action has potential to change components within pelagic trawl gear, this action would not change the overall fishery management structure that includes the harvest specifications process used to set overall limits for target or non-target species, general timing of fishing, the management area of where fishing activity is authorized to occur, existing habitat protections such as closed areas, or other fishing regulations applicable to existing fishing operations. Therefore, as pelagic trawl gear is currently configured and operates, it is not expected to have additional effects for groundfish, ecosystem component species, marine mammals, or seabirds beyond those effects previously analyzed are expected as a result of the proposed action. Several previous Council actions have included analysis of pelagic trawl gear or BSAI pollock fishery impacts to resource components and are briefly summarized and referenced below.

In 2016, the EA for Amendment 110 to the FMP for Groundfish of the BSAI Management area, an action proposed to address Chinook and chum salmon PSC challenges in the BSAI pollock fishery and complement previous bycatch reduction regulations from Amendment 91, was found to have no significant impacts on target and nontarget species, marine mammals, ecosystem function, or essential fish habitat as it would not change the harvest specifications process or the footprint or prosecution of the fishery (NMFS 2016a).

In 2020, the EA for Amendment 111 to the FMP for Groundfish of the GOA examined proposed management measures applying to the Rockfish Program fisheries, of which pelagic trawl gear is increasingly used for POP (Section 3.3.4, NMFS 2020). The analysis found that cumulative effects from the reauthorization of the Rockfish Program would not result in significant adverse effects on managed fish species including target or non-targeted species (EA Section 2.2 and 2.3; NMFS 2020) as the proposed action would maintain the current Rockfish Program management structure that has been in place since 2012. The analysis also found that effects on Essential Fish Habitat from commercial fishing activity, including from pelagic trawl gear, were minimal or temporary in nature to alter beyond current conditions (EA Section 2.4.1, NMFS 2020).

In 2024, the EA for Amendment 126 to the FMP for Groundfish of the BSAI Management Area and Amendment 114 to the FMP for groundfish of the GOA examined proposed management measures to allow an electronic monitoring (EM) system to supplement existing observer coverage for pollock CVs using pelagic trawl gear and tender vessels in the North Pacific Observer Program. The impacts of pelagic trawl gear used in the pollock fishery was analyzed in this document, which describes baseline conditions and interactions between pelagic trawl gear and resource components. Further, no potential effects for ecosystem component species, seabirds, habitat, or the ecosystem beyond effects previously analyzed were expected as a result of the proposed action under Amendment 126 since harvest limits, habitat protections (such as closed areas), and current fishing regulations for existing fishing operations were not changed (EA Chapter 4; NMFS 2024b).

In 2025, the BS Chum Salmon Bycatch Management preliminary DEIS (NPFMC 2025) found that since a sustainable pollock biomass is yielded on a continuing basis and because of stock's ability to sustain itself regardless of any minor modification in stock distribution as a result of fishing effort, pollock stocks were being sustainably managed under status quo conditions. The analysis found that status quo would retain current regulations for chum and Chinook salmon PSC bycatch management, herring PSC and would have minimal effects on marine mammals and seabirds. Furthermore, status quo would not be expected to have any change in the fisheries effects on benthic habitat (NPFMC 2025).

Alternative 2 includes proposed changes to the regulatory definition of pelagic trawl gear at § 679.2 to clearly allow commonly used components in codends and bycatch excluder devices, allow instrumentation necessary to monitor and adjust net performance, and remove unnecessary outdated text. This action does not change the amount of target or non-target species harvested. Pollock and POP are the primary target species harvested with pelagic trawl gear in the BSAI and GOA (see Chapter 3). Groundfish catch limits are established and published annually through the BSAI and GOA harvest specifications process in regulation at § 679.20(c). This action does not contemplate changes and would not affect the annual process used by the Council and NMFS to establish groundfish catch limits. Groundfish management areas for vessels targeting groundfish using pelagic trawl gear are outlined in regulation at § 679.1(a) for the GOA management area and § 679.1(b) for the BSAI management area with locations further determined by closure areas outlined at § 679.22. This action does not contemplate changes to areas where pelagic trawl gear is allowed or disallowed and therefore fishing is expected to continue at the same areas where currently permitted. This action is not expected to result in impacts to:

- groundfish and nongroundfish species,
- ecosystem component species,
- marine mammals, or
- seabirds

Similar to the aforementioned referenced actions, this action is not expected to impact the above listed resource components and no further analysis of these resource components is necessary for this action.

Changes contemplated by this proposed action could affect the placement of gear within the water column, as well as the potential effectiveness of salmon excluder devices. Overall, fishing effort is not expected to change as the purpose of this action is to update the definition of pelagic trawl gear to allow

commonly used components, including flotation and metal components, in codends and salmon excluder devices. However, any changes affecting placement of gear in the water column may cause potential impacts to the marine ecosystem. Notably, there could be impacts to the essential fish habitat component of the marine ecosystem. Therefore, resource components that could be affected by the action and that are discussed in more detail below are:

- PSC: Chinook salmon and chum salmon
- Essential Fish Habitat (EFH)

5.1.3 Effects of Aggregate Past, Present, and Reasonably Foreseeable Actions

This EA analyzes the effects of each alternative and the effects of past, present, and reasonably foreseeable actions. The resources with potentially meaningful cumulative effects are salmon PSC, habitat, and social and economic components. The aggregate effects of past actions on the groundfish and nongroundfish species, ecosystem component species, marine mammals, seabirds, and the ecosystem have been analyzed in the referenced documents and the impacts of this proposed action and alternatives on those resources is projected to be minimal.

Each section below provides a review of the relevant past, present, and reasonably foreseeable actions that may result in cumulative effects on the resource components analyzed in this document. A complete review of the past and present actions as described in prior NEPA documents are incorporated by reference (Section 5.1.1) and the supplemental information report (SIR) NMFS prepares to annually review the latest information since the completion of the Alaska Groundfish Harvest Specifications EIS. SIRs have been developed since 2007 and are available on the NMFS Alaska Region website. Each SIR describes changes to the groundfish fisheries and harvest specifications process, new information about environmental components that may be impacted by the groundfish fisheries, and new circumstances.

Actions are understood to be human actions (e.g., a designation of northern right whale critical habitat in the Pacific Ocean), as distinguished from natural events (e.g., an ecological regime shift). NEPA requires consideration of actions, whether taken by a government or by private persons, which are reasonably foreseeable. This requirement is interpreted to indicate actions that are more than merely possible or speculative. Actions are considered reasonably foreseeable if some concrete step has been taken toward implementation, such as a Council recommendation or NMFS's publication of a proposed rule. Actions only "under consideration" have not generally been included, because they may change substantially or may not be adopted, and so cannot be reasonably described, predicted, or foreseen. Identification of actions likely to impact a resource component within this action's area and time frame will allow the public and Council to make a reasoned choice among alternatives.

5.2 Salmon PSC

5.2.1 Background

Pacific salmon are caught incidentally in fisheries utilizing pelagic trawl gear in both the BSAI and GOA management areas. Salmon in the BS and GOA exist in the same times, locations, and depths as pollock and are thus caught in the nets of fishermen targeting pollock. Of the five species of Pacific salmon found in Alaska's waters, Chinook salmon and chum salmon are most often encountered in the BSAI and GOA groundfish fisheries.

NMFS manages all species of salmon as prohibited species in the BSAI and GOA groundfish fisheries because they are not the target species and are fully allocated for other uses including subsistence, commercial, and recreational fisheries in and off Alaska and Canada, with the exception of the Cook Inlet EEZ area.

Bering Sea

An overview of chum and Chinook salmon biology and distribution in the BS can be referenced in Sections 3.2 and 3.3 of the BS Chum Salmon Bycatch Management preliminary DEIS (NPFMC 2025). From severely declining to moderately increasing, chum salmon population abundance trends are diverse throughout their geographic range. In Alaska and Canada, abundance was relatively stable from 2010–2020. Over the past three to five years, however, chum salmon populations have shown decline in all regions of the North Pacific with few exceptions, including spawning runs in rivers emptying into the BS (NPFMC 2025). Chinook salmon caught as bycatch in the BS pollock fishery have been found to originate from river systems in Russia, Asia, across Alaska, Canada, and the Pacific Northwest. Similar to chum salmon, Chinook salmon population abundance trends vary throughout their geographic range. The current abundance and productivity of Chinook salmon populations statewide began to decline in 2007 and have been lower than the historical average since 2008, including for western Alaska runs (ADF&G 2022). Chinook salmon abundance declines culminated with the lowest adult returns on record in the Yukon River in 2022 at 81% below the recent 30-yr mean (NPFMC 2025).

To support salmon bycatch management in the BS pollock fishery, regulations require 100% observer coverage or electronic monitoring (EM) regardless of vessel length, 100% retention of all salmon species, a census of all salmon species in every haul or fishing trip, and an expanded biological sampling program (NMFS 2023). The combination of full (100%) observer coverage, cameras, and EM enables a complete count of all PSC salmon in the BS pollock fishery. Biological and genetic samples are collected from the salmon bycatch and analyzed by the Alaska Fisheries Science Center to understand the stock of origin, aiding in development of bycatch reduction strategies (NMFS 2023).

Chinook and chum salmon bycatch management measures in the BS pollock fishery are in federal regulations at § 679.21(f). Existing management measures include:

- Chinook salmon PSC limit based on a threshold of high or low abundance of western Alaska Chinook (§ 679.21(f)(2))
    - AFA sector receives a portion of the 47,591 Chinook salmon PSC limit, or, in a low Chinook salmon abundance year, the 33,318 Chinook salmon PSC limit if no IPA is approved by NMFS or the AFA sector has exceeded its performance standard (§ 679.21(f)(2)(i))
    - AFA sector receives a portion of the 60,000 Chinook salmon PSC limit, or, in a low Chinook salmon abundance year, the 45,000 Chinook salmon PSC limit if at least one IPA is approved and the AFA sector has not exceeded its performance standard (§ 679.21(f)(2)(ii))
- Seasonal apportionment of Chinook PSC limits (§ 679.21(f)(3))
- A Chinook salmon bycatch performance standard calculated annually (§ 679.21(f)(6))
- Salmon bycatch Incentive Plan Agreements (IPAs) to avoid Chinook salmon and chum salmon bycatch under any condition of pollock and Chinook salmon abundance in all years (§ 679.21(f)(12)).
    - Rolling hotspot program chum salmon avoidance (§ 679.21(f)(12)(iii)(E)(8))
    - Vessel use of salmon bycatch excluder devices (§ 679.21(f)(12)(iii)(E)(11))
- Season closures if PSC limits are reached (§ 679.21(f)(15)(ii))
- Improved monitoring and enforcement provisions including:
    - salmon retention and handling requirements on CVs for improved scientific data and biological sample collection (§ 679.21(h)(6))
    - electronic reporting of observer data on CVs less than 125 ft LOA

Bycatch rates over the last 5 years for Chinook salmon in the BS groundfish fisheries (trawl and non-trawl) has ranged from a high of 34,976 in 2020 to a low of 8,342 in 2022 (Table 5-1). Bycatch rates over

the last 5 years for chum salmon has ranged from a high of 545,549 chum salmon in 2021 to a low of 116,723 (Table 5-1)[21].

Table 5-1 Count of total salmon incidental catch in the BSAI groundfish trawl and nontrawl fisheries by year and species. Total non-Chinook salmon = chum salmon, sockeye salmon, pink salmon, and Coho salmon

Total Salmon Incidental Catch in the BSAI Groundfish Fisheries (trawl and nontrawl)		
Year	Species	Count
2020	Chinook Salmon	34,976
2020	Chum Salmon	342,888
2020	Total Non-Chinook Salmon	346,380
2021	Chinook Salmon	15,896
2021	Chum Salmon	545,549
2021	Total Non-Chinook Salmon	550,698
2022	Chinook Salmon	8,342
2022	Chum Salmon	242,278
2022	Total Non-Chinook Salmon	245,269
2023	Chinook Salmon	14,607
2023	Chum Salmon	112,027
2023	Total Non-Chinook Salmon	116,723
2024	Chinook Salmon	10,458
2024	Chum Salmon	34,991
2024	Total Non-Chinook Salmon	39,386

Source: NMFS Catch Accounting System, queried January 2025

Gulf of Alaska

Coded-wire tagged Chinook salmon recovered as bycatch in the GOA have been identified as salmon originating from Alaska, British Columbia, Washington, Idaho, and Oregon for 2001–2023 (NMFS 2023). Traditionally, large runs of Chinook salmon have occurred in large river systems flowing into the GOA including the Karluk, Chignik, Kenai, Sustina, Copper, Stikine, Taku, Chilkat and Unuk Rivers. The current abundance and productivity of Chinook salmon populations statewide began to decline in 2007 and have been lower than the historical average since 2008, including for runs in the GOA (ADF&G 2022). In the Taku River in Southeast Alaska, runs of spawning Chinook salmon have remained below the upper run goal since 2007 and have missed the run goal since 2016[22].

An overview of the biology of Chinook salmon and distribution in the GOA is provided in Section 2.3.2 in the EA/RIR for the Rockfish Program Reauthorization (NMFS 2020) and is not repeated here. A detailed summary of existing salmon bycatch management measures in the GOA is included in Section 2.2.3 of the Biological Opinion for the FMP for the Groundfish Fisheries in the GOA (NMFS 2024a). The Observer Program's biological salmon sampling protocols for the GOA pollock fishery are guided by the regulations implementing Amendment 93 to the GOA FMP (77 FR 42629, July 20, 2012). These regulations require 100% retention of all salmon caught in the Western and Central GOA-directed pollock trawl fishery. The Observer Program requires participation of CVs between 40 ft. and 125 ft. LOA in the

[21] Prohibited species catch data for the BSAI and GOA management areas can be accessed at: https://www.fisheries.noaa.gov/alaska/commercial-fishing/fisheries-catch-and-landings-reports-alaska#bsai-prohibited-species

[22] https://www.adfg.alaska.gov/index.cfm?adfg=chinookinitiative_taku.main

partial coverage category for observer coverage or EM. These vessels are randomly selected for observer coverage or EM on a trip-by-trip basis through the Observer Declare and Deploy System (ODDS). Existing management measures include:

- Maximum annual Chinook salmon PSC limits (32,500) (§ 679.21(h)(2))
    - 25,000 fish divided among directed pollock fisheries in Central and Western GOA (§ 679.21(h)(2)(i))
    - 7,500 fish for non-pollock trawl fisheries in Central and Western GOA (§ 679.21(h)(4))
- Incentives for reducing Chinook salmon PSC for the trawl C/P and Non-Rockfish Program CV sectors (*i.e.,* "buffer incentives") (§ 679.21(h)(4)(i))
- Annual cap on reapportionment of unused Chinook salmon PSC (§ 679.21(h)(5)(iv))
- Salmon retention under specific scenarios for improved scientific data and biological sample collection (§ 679.21(h)(6))
- Chinook salmon PSC closures if limits are met (§ 679.21(h)(8))

NMFS determines salmon PSC with a combination of partial observer coverage, cameras, and EM in the GOA pollock fishery (NMFS 2023). Biological and genetic samples, as well as coded wire tag samples, are collected from the salmon bycatch and analyzed by the Alaska Fisheries Science Center to understand the stock of origin (NMFS 2023).

Bycatch rates over the last 5 years for Chinook salmon in the GOA groundfish fisheries (trawl and non-trawl) have ranged from a high of 28,336 in 2024 and a low of 11,851 in 2020 (Table 5-2). Bycatch rates over the last 5 years for non-Chinook salmon in the GOA has ranged from a high of 5,251 non-Chinook salmon in 2022 to a low of 3,433 in 2020[23].

Table 5-2 Count of total salmon incidental catch in the GOA groundfish trawl and nontrawl fisheries by year and species. Total non-Chinook salmon = chum salmon, sockeye salmon, pink salmon, and Coho salmon

Total Salmon Incidental Catch in the GOA Groundfish Fisheries (trawl and nontrawl)		
Year	Species	Count
2020	Chinook salmon	11,420
2020	Total Non-Chinook Salmon	3,433
2021	Chinook salmon	16,971
2021	Total Non-Chinook Salmon	3,715
2022	Chinook salmon	16,971
2022	Total Non-Chinook Salmon	5,251

Source: NMFS Catch Accounting System, queried January 2025

5.2.2 Effects of the alternatives on salmon PSC

Regardless of which alternative is ultimately chosen, existing salmon bycatch reduction measures including incentives to avoid salmon PSC would remain unchanged for both the GOA and BSAI management areas. However, salmon excluders (see Section 3.2.3) are subject to the pelagic trawl gear definition, and thus subject to any changes within that definition. Any impediments to the functionality of salmon excluder devices (such as removal of metallic components or flotation) could affect the resulting salmon PSC, potentially resulting in altered fishing effort, location, and or trip length to avoid increases in salmon PSC. Although this could result in more frequent moves to avoid salmon PSC, fishing location

[23] Prohibited species catch data for the BSAI and GOA management areas can be accessed at: https://www.fisheries.noaa.gov/alaska/commercial-fishing/fisheries-catch-and-landings-reports-alaska#bsai-prohibited-species

remains highly variable from year to year. Salmon excluders are required in BSAI pollock fishery IPAs, however there is currently no performance standard that would mandate a certain level of effectiveness to reduce a specified level of bycatch. Any potential increases in frequency of changes in fishing location to avoid salmon PSC would remain confined within the specified management area. Fishing location for any given haul may vary as a result of this action, yet the overall footprint of fishing activity throughout the season is not expected to change. However, as one of the stated goals of this action is to allow for commonly used components in bycatch excluder devices, negative impacts are not expected.

Alternative 1

Alternative 1 is the no action alternative. Under Alternative 1, flotation would not be allowed within salmon excluder devices, unless the excluder was forward of 5.5 inch mesh stretched measure and only to provide buoyancy for a net sounder device. As such, salmon excluder devices would be limited from using flotation, which are commonly used in several trial tested salmon excluders deployed in pelagic trawl gear in both the GOA and BSAI. Metallic components, other than connectors such as hammerlocks or swivels and one net sounder, would remain limited and may only be used in excluders if the excluder is placed aft of 5.5 inch mesh stretched measure. As described in Section 3.2.3 of this document, many excluder designs include use of a weighted "flapper" panel. If the weighted panel contains metallic components other than connectors, even if it is located forward of 5.5 inch stretched mesh, it would not be compliant with the present definition of pelagic trawl gear. Thus, Alternative 1 would require retrofitting or removal of salmon excluder devices to comply with the definition.

Additional catch of salmon PSC might occur with the use of excluder designs that are compliant with the current regulatory definition. If vessel operators modify the excluder devices used in their gear, this could affect the resulting effectiveness of excluder devices. Altered effectiveness of bycatch excluder devices could result in changes (increase or decrease) to the escapement of salmon encountered in the pollock fishery, and potentially changes to the escapement rate of pollock from the net. However, salmon PSC limits would continue to incentivize vessels to avoid salmon, which could then alter fishing effort, location and length, potentially at the expense of pollock or POP CPUE. Electronic instruments such as lights and live-feed cameras may also be used in bycatch excluders, which would not be permitted under Alternative 1. Considering one of the stated goals of this action is to clearly allow commonly used components in bycatch excluder devices, Alternative 1 is not the preferred alternative

Alternative 2

Alternative 2 could allow salmon excluder devices that are currently in use to remain in pelagic trawl gear as they were designed, depending on which options and suboptions are chosen. Most salmon excluders are located aft of 5.5 inch stretched mesh, although some are located forward of 5.5 inch stretched mesh depending on the pelagic trawl gear configuration and excluder design. All variations of salmon excluders currently in use are located aft of 15 inch mesh stretched measure. Option 3 Suboption 1 would allow flotation in salmon excluders located aft of 5.5 inch mesh stretched measure, but would not permit flotation in any excluders located forward of 5.5 inch mesh stretched measure, which could limit salmon excluder troubleshooting and effectiveness in certain gear. Option 3, Suboption 2 would permit flotation in any salmon excluder aft of 15 inch mesh stretched measure. However, metallic components would continue to be limited in salmon excluders unless Option 5, Suboption 3(b) was also selected. Alternative 2, Option 4 would permit electronic instruments such as live feed cameras and lights to continue to be used in salmon excluders, although instruments may be included under metallic components and thus could be alternatively permitted through the selection of Alternative 2, Option 5.

Alternative 2, Option 4 would allow instruments that would adjust the fishing gear in pelagic trawl gear, which may allow innovative bycatch excluder devices in pelagic trawl gear. Option 4 may also have unforeseen consequences if permitted in the forward part of pelagic trawl gear if an instrument were to reduce the large forward mesh sizes as described in subparagraph (v) of the pelagic trawl gear definition.

Alternative 2, Option 3, Suboption 2, alongside Option 5, Suboption 3(b), would permit the continued use of all salmon excluder designs that are currently used in pelagic trawl gear, which would continue to be beneficial in reducing salmon PSC, notably Chinook salmon, and would not be expected to have any additional negative effects on salmon PSC. However, if the Council selects a different suite of options under Alternative 2 that would require retrofitting or removal of any salmon excluders currently in use, that could have negative impacts on total salmon bycatch levels if vessels do not adapt to a compliant, but equally effective, excluder design.

5.2.3 Effects of Aggregate Past, Present, and Reasonably Foreseeable Actions on Salmon PSC

Bering Sea

Past and present human actions impacting chum salmon stocks in the BS have been highlighted in numerous documents (e.g., Farley et al., 2024; Whitworth et al. 2023) and in Chapter 3 of the Preliminary Chum Salmon Bycatch Measures DEIS (NPFMC 2025). Past and present human actions that may affect chum salmon include bycatch in the BS pollock fishery and associated avoidance techniques, chum salmon catch in the state-managed Area M fishery, directed catch from commercial, recreational, and subsistence salmon fisheries in river and in the ocean, competition from hatchery releases, and environmental factors associated with climate change (NPFMC 2025).

Some reasonably foreseeable future actions are expected to impact and interact with all resource components: the continued authorization of the BS pollock fishery through the annual harvest specifications process, prosecution of the BS pollock fishery, and climate change. The impacts of these reasonably foreseeable future actions and other actions affecting each resource component are evaluated in the Preliminary Chum Salmon Bycatch Measures DEIS (NPFMC 2025). This proposed action, there are two directly relevant future actions, the EFP for the chum excluder device (2025-01) and new management measures to minimize chum salmon bycatch in the BS pollock fishery.

In April 2025, the Council reviewed an application for an EFP submitted by Mr. John Gauvin, under contract with the North Pacific Fisheries Research Foundation.[24] The applicant proposes to develop and test salmon excluders in the BS pollock fishery to optimize salmon escapement under summer fishing conditions where chum salmon is the primary salmon species encountered as bycatch in the pollock fishery. The applicant proposes to conduct field testing in July and August, 2025, during the fishery's "B" season. The applicant proposes to test a new excluder design that will be installed further forward in the net, compared to currently available salmon excluders, where the diameter of the trawl net is much larger. The focus for EFP testing will be to determine the best location for the new excluder in terms of creating an improved opportunity for salmon escapement while minimizing pollock loss.

In February 2025, the Council reviewed the preliminary Draft Environmental Impact Statement for a proposed amendment to the FMP for groundfish in the BSAI management area aimed at minimizing chum salmon bycatch in the BS pollock fishery (NPFMC 2025). The analysis is considering a range of PSC limits or "caps" on the number of chum salmon that may be caught in the BS pollock fishery and closure of all or part of the BS to pollock fishing once the limit is reached. The preliminary DEIS provides an assessment of the environmental, economic, and social impacts of the proposed action alternatives and their distribution.

[24] EFP application 2025-01 is available under the Salmon Bycatch heading at: https://www.fisheries.noaa.gov/alaska/resources-fishing/exempted-fishing-permits-alaska.

Gulf of Alaska

Challenges facing evolutionary significant units of Chinook salmon originating in Washington and Oregon are discussed in detail in Section 4.1.5 of the biological opinion for the FMP of the Groundfish fisheries of the GOA and are not repeated here (NMFS 2024a). In response to some of these challenges, several past actions and amendments have been considered by the Council and implemented through the FMP for groundfish in the GOA to reduce Chinook salmon PSC in the GOA and are listed below. No regulatory limits are in place for non-Chinook salmon PSC in GOA groundfish fisheries. One future action, the petition to list GOA populations of Chinook salmon as threatened or endangered under the Endangered Species Act (ESA), is currently under review by NMFS.

On September 25, 2024, the Central GOA pollock fishery was closed for the remainder of the B season to prevent exceeding the 2024 Chinook salmon PSC limit. The sector unexpectedly reached its annual Chinook salmon PSC limit for the Western and Central GOA when two CVs targeting pollock landed around 2,000 Chinook salmon. Although the GOA pollock fishery is under the partial observer category, both vessels had observers onboard at the time. Genetic samples were collected from bycatch and analyzed by the Alaska Fisheries Science Center to understand the stock of origin.

On May 24, 2024, NMFS announced a 90-day finding on a petition to list GOA Chinook salmon as a threatened or endangered species under the ESA and to designate critical habitat concurrent with the listing (89 FR 45815, May 25, 2024). The petition, when viewed in the context of information readily available in NMFS files, presented substantial scientific or commercial information indicating that the petitioned action may be warranted. Therefore, NMFS commenced a review of the status of GOA Chinook salmon to determine whether listing under the ESA is warranted. The public comment period was subsequently extended for 60 days to solicit scientific and commercial information on the status of the GOA Chinook population (89 FR 53936, June 28, 2024). The review is ongoing and the outcome of this review is a future action.

In April 2017, the Council initiated an analysis evaluating a potential increase for the GOA CV Chinook salmon PSC limit. The action could have either increased Chinook salmon PSC limits or added flexibility in the form of annual rollovers of unused PSC for trawl vessels targeting Pacific cod, rockfish, and flatfish in the Central and Western GOA. After reviewing alternatives in April 2018, the Council determined that modifying the limit was not appropriate at the time due to concerns about the status of Chinook salmon stocks known to occur as bycatch in the GOA non-pollock trawl fishery. The Council also noted the possibility that Federal actions relating to Chinook salmon removals could create an unintended interference with the decadal renegotiation of the Pacific Salmon Treaty between the United States and Canada, which were ongoing in April. The Council did not identify a future time at which this action should be revisited, but signaled its intent to monitor both the status of Chinook salmon stocks and the performance of the PSC-limited GOA trawl CV sector[25].

In 2016, Amendment 103 to the GOA FMP provided NMFS Inseason Management with the authority to reapportion salmon PSC limits among trawl sectors in the GOA within a fishing year. The purpose is to reduce the chances of closing a fishery due to a sector reaching its PSC limit while ensuring that the total catch of Chinook salmon PSC in the Central and Western GOA trawl fisheries does not exceed the overall FMP limit of 32,500 Chinook salmon (NMFS 2016b).

[25] The April 2018 council motion on GOA Chinook PSC: https://meetings.npfmc.org/CommentReview/DownloadFile?p=5da210d8-7c98-4b90-ab18-7fc707875049.pdf&fileName=MOTION%20C6.pdf

On May 3, 2015, all groundfish fisheries for the Non-Rockfish Program CV sector were closed for the remainder of 2015, because the sector unexpectedly reached its annual Chinook salmon PSC limit for the Western and Central GOA of 2,700 Chinook salmon. A prolonged closure would have been detrimental to the community of Kodiak, harvesters, and processors. In June 2015, the Council therefore recommended and NMFS implemented an emergency rule providing an additional 1,600 Chinook salmon PSC allowance to the GOA groundfish trawl fisheries for the Non-Rockfish Program CV sector. Providing the additional limit of 1,600 Chinook salmon PSC restored a substantial portion of the forgone groundfish harvest and associated revenue made unavailable by the closure by allowing the sector to harvest its recent average amount of groundfish for the remainder of 2015 while keeping the total Chinook salmon PSC at or below 32,500, below the annual 40,000 threshold. The emergency rule was published in the Federal Register on August 10, 2015 (80 FR 47864), and became effective on publication. The effectiveness period ended on December 31, 2015. Between August 10, and December 31, 2015, only 12 additional Chinook salmon PSC of the 1,600 allowed were caught by the Non-Rockfish Program CV sector.

Early 2015, Amendment 97 established annual Chinook salmon PSC limits for all groundfish trawl fisheries except for pollock in the Western and Central GOA. It also established incentives for reducing Chinook salmon PSC for the trawl C/P and Non-Rockfish Program CV sectors, and established seasonal Chinook salmon PSC limits for the trawl C/P sector (NMFS 2015).

In 2012, Amendment 93 was implemented in the GOA to limit the amount of Chinook salmon caught in the pollock fishery. Amendment 93 establishes separate PSC limits in the Central and Western GOA for Chinook salmon, which would cause NMFS to close the directed pollock fishery in the Central or Western regulatory areas of the GOA if the applicable limit is reached. This action also requires retention of salmon by all vessels in the Central and Western GOA pollock fisheries until the catch is delivered to a processing facility where an observer is provided the opportunity to count the number of salmon and to collect scientific data or biological samples from the salmon (NMFS 2012).

5.3 Habitat

5.3.1 Background

Fishing operations may change the abundance or availability of certain habitat features used by managed fish species to spawn, breed, feed, and grow to maturity. These changes may reduce or alter the abundance, distribution, or productivity of species. The effects of fishing on habitat depend on the intensity of fishing, the distribution of fishing with different gears across habitats, and the sensitivity and recovery rates of specific habitat features.

In 2005, NMFS and the Council completed the Environmental Impact Statement (EIS) for Essential Fish Habitat (EFH) Identification and Conservation in Alaska (NMFS 2005). The EFH EIS evaluates the long-term effects of fishing on benthic habitat features, as well as the likely consequences of those habitat changes for each managed stock, based on the best available scientific information. The EFH EIS also describes the importance of benthic habitat to different groundfish species and the past and present effects of different types of fishing gear on EFH. Based on the best available scientific information, the EIS analysis concludes that no Council managed fishing activities have more than minimal and temporary adverse effects on EFH for any FMP species, which is the regulatory standard requiring action to minimize adverse effects under the MSA (50 CFR 600.815(a)(2)(ii)). Additionally, the analysis indicates that all fishing activities combined have minimal, but not necessarily temporary, effects on EFH.

NMFS and regional fishery management councils should review, and update as warranted, EFH information every 5 years (50 CFR 600.815(a)(10)). Reviews of FMPs by NMFS and the NPFMC have been conducted in 2010, 2017, and, most recently, 2023. The objective of each EFH Review is to evaluate

and synthesize new information for each component, and determine whether changes to the FMPs are warranted. These 5-year reviews have not indicated findings different from those in the 2005 EFH EIS with respect to fishing effects on habitat. Maps and descriptions of EFH for groundfish and crab species are available in the applicable FMP. A summary of the findings from the evaluation of fishing effects on EFH are also included in the amended FMPs (see the Draft EFH 5-year Review Summary Report).

Fishing Effects Model Overview

During the 2017 EFH 5-year Review, NMFS contracted with the Alaska Pacific University (APU) to develop a Fishing Effects model. The Fishing Effects model estimates benthic habitat disturbance from commercial fishing activities across 25 km^2 grid cells throughout the EBS, AI, and GOA. It is based on the interaction between the amount and spatial extent of fishing effort, types of fishing gear, habitat susceptibility to fishing gear, the rate at which habitat recovers, and information about the spatial extent of habitat types.

The model uses a gear specific contact adjustment for vessels based on their vessel type (CV or CP gear type, target species, vessel length, fishing season, and depth range (Appendix 2, Zaleski et al. 2024). These parameters inform the contact adjustment used to estimate the proportion of the nominal width of the gear that contacts the seafloor across the time and area of a vessel track while fishing. Whereas the *swept area* of a fishing trip is the estimated total aerial coverage across the seafloor (the product of length of fishing and the nominal width of the gear), the *bottom contact area* takes the adjustment and estimates how much of the seafloor has been touched by gear (i.e., a fraction of the swept area).

The bottom contact area is then used to estimate the cumulative disturbance to benthic habitat using susceptibility and recovery rates of the different benthic habitat features based on location and sediment type. Susceptibility refers to a habitat feature's vulnerability to damage and recovery refers to a habitat feature's ability to return to an undisturbed state (Grabowski et al. 2014, Smeltz et al. 2019). Because recovery is included in the Fishing Effects model, it can treat locations with repeated fishing activity differently than locations rarely disturbed.

Following the 2017 EFH review, APU reviewed and updated the Fishing Effects model with additional modifications and this revised Fishing Effects model was used for the 2022 fishing effects assessment (Zaleski et al. 2024). We used the methods and process of evaluating fishing impacts on EFH developed for the 2017 EFH 5-year Review for this iteration. Model outputs from each region were overlaid with the core EFH areas from new species distribution models developed for each FMP species, and these results were provided to stock assessment authors and experts for their quantitative or qualitative evaluation of fishing effects.

2022 Fishing Effects Evaluation for FMP Species

The most recent evaluation of fishing effects on EFH was performed for species of groundfish and crabs, including 42 GOA species, 27 AI species, and 34 EBS species (Zaleski et al. 2024). Stock assessment authors reviewed the results of the Fishing Effects model and were given the opportunity to provide an Fishing Effects model evaluation for their stocks. A selected threshold of ≥ 10% estimated habitat disturbance within the core EFH area was reached for 16 of the 103 species evaluated. This was one of the triggers for stock assessment authors to take a closer look at trends in life history parameters and the time series of disturbance estimates. None of the stock assessment authors concluded that habitat disturbance within the core EFH area for their species was affecting their stocks in ways that were more than minimal or not temporary. None of the authors recommended elevating the species for mitigation measures against impacts of fishing on EFH at the conclusion of the 2022 Fishing Effects model evaluation (Zaleski et al. 2024).

5.3.2 Effects of the alternatives on habitat

The effects of the alternatives on EFH would be based on one of two factors: changes in gear configurations and/or changes in fishing effort. Either of those changes would impact the interaction between pelagic trawl gear and benthic habitat. The potential changes in habitat impacts as a result of the alternatives provided below:

Alternative 1

Alternative 1 would require the reconfiguration of pelagic trawl gear components to meet current trawl definition designs. These changes of gear modifications could impact the amount of bottom contact of the gear. These changes would be reflected in updates to the gear parameters used in the fishing effects model and result in changes to estimates of bottom contact by pelagic trawl and overall habitat disturbance from the comprehensive model approach. For example, reverting gear configurations back from what is defined in Alternative 2, Options 1 and 3 would remove flotation components at strategic locations and could potentially increase the overall rate of bottom contact by the codend.

Another impact from Alternative 1 to habitat and the estimates of habitat disturbance would be from changes in fishing effort. If gear modifications must be changed to comply with the current definition, that could change the catch efficiency and therefore change the amount of time for fishing. If the fishery using pelagic trawl gear increases the duration of fishing in areas due to lower CPUE, the impacts to habitat would be expected to increase due to greater overlapping instances of bottom contact, though the susceptibility and recovery rates of the geological and biological habitat features influence the overall estimates of disturbance (see Appendix 3, Zaleski et al. 2024).

Alternative 2

Alternative 2 would revise the definition of pelagic trawl gear to meet what is currently in functional use. It is not likely the change in text definition would impact overall fishing effort or location. For Options 1-3, the estimates for bottom contact from pelagic trawl gear would be similar because it wouldn't change the model inputs for gear specific contact adjustments, and the fishing effects model output would also be the same. Estimates of bottom contact by pelagic trawl gear as currently configured would likely look similar to what has previously been modeled (Figure 5-1). The figure shows the mean annual estimate of bottom contact of pelagic trawl gear using vessel data from January 2013 to August 2022 (data source: NMFS Catch Accounting System, Catch in Areas Database). Monthly estimates of bottom contact area were estimated by 5x5 km grid cells across the BS, Aleutian Islands, and GOA, and overlapping tracks are counted cumulatively. The grid cell estimates were summed across each year and averaged for each area to get the mean yearly estimate. Hotspots of estimated bottom contact may be observed in areas with more overlapping pelagic trawl fishing like in the southern BS north of Unimak Pass and following along the outer shelf (Figure 5-1). Some hotspots can also be expected in smaller areas within the central and western GOA.

The options under Alternative 2 that may change estimated impacts to habitat are Options 4 and 5. Under Option 4, changing the definition to allow for added components that are already commonly used in practice will not change the metrics currently used for bottom contact adjustments. However, if there are added components beyond what is currently in practice, those additional components could change weight distribution and increase the likelihood of bottom contact depending on the location of the added instruments. There is also the discussion of the term 'adjustments' under Option 4, and if the adjustments that are allowed through changing the definition include changing where the net fishes in the water column, and not just bycatch excluder devices, that will directly change the impact to benthic habitat. If, for example, instruments enable a net to fish closer to the seafloor, that will likely increase bottom contact and will be reflected in appropriate contact adjustments in the fishing effects model. Conversely, if instruments enable better monitoring of net placement in the water column to avoid bottom contact, that

could reduce the impacts to habitat. Any added instruments through Option 4 may be limited depending on the adoption of Option 5.

Impacts from changes in the use of metallic components under Alternative 2, Option 5, rely on which suboption is selected and could either have no effect on current habitat disturbance estimates or increase the potential for bottom contact. Both Suboption 1 and Suboption 3 would likely not change the regulatory or operational status quo and not change the metrics currently used for bottom contact adjustments. Suboption 2 may allow metallic components in addition to those currently used in pelagic trawl gear that could change the function of the net by increasing the weight in the middle portion of the net, thereby mimicking bottom trawl gear and increasing habitat disturbance during fishing. Under Suboption 2 and as a result of increased bottom contact, contact adjustments in the fishing effects model would be updated and we would expect to see resulting increases to the overall estimates of habitat disturbance (see Appendix 2, Zaleski et al. 2024). This outcome is dependent on if Alternative 2, Option 5, Suboption 2 is selected in the Council's preferred alternative.

Overall, if pelagic trawl fishing effort time and location stays the same, the estimated minimal impacts to benthic habitat from gear contact under the fishing effects model would be expected to stay the same. Therefore, effects on EFH under Alternative 2 are expected to be minimal and temporary in nature and are not expected to differ from what has been evaluated in previous NEPA, EFH, or FMP documents.

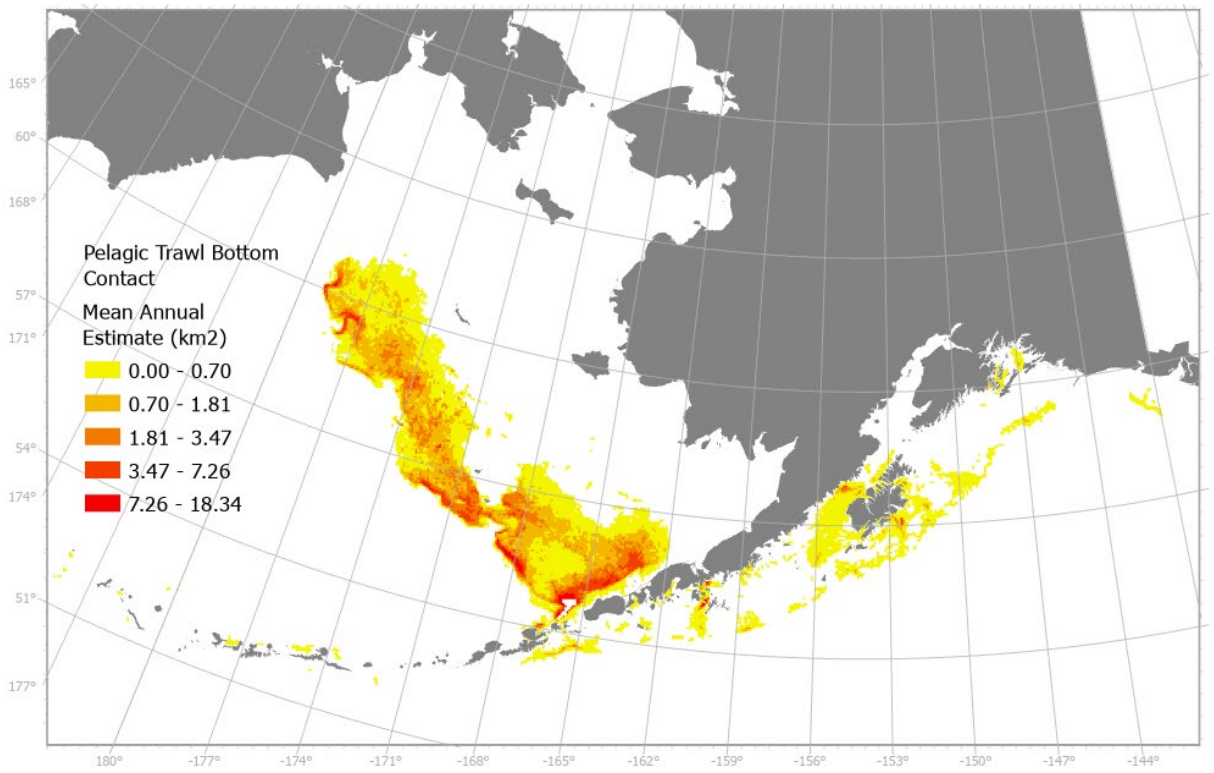

Figure 5-1 Average of estimated yearly bottom contact from pelagic trawl gear. The unit of measure is cumulative area (km2) per 5x5 km grid cell (vessel data from between January 2013 through August 2022, Catch in Areas Database).

5.3.3 Effects of Aggregate Past, Present, and Reasonably Foreseeable Actions on Habitat

The following reasonably foreseeable actions are identified as likely to have an impact on habitat within the action area and timeframe.

Fishing effects from all federal fisheries: Fishing gear that contacts the seafloor can impact habitat used by a fish species for the processes of spawning, breeding, feeding, or growth to maturity. The footprint and quantity of habitat disturbance varies with gear (type, weight, towing speed, depth of contact), the physical and biological characteristics of the areas fished, and the susceptibility and recovery rates of biological and geological substrates in the areas fished, as explained in the Fishing Effects Model Overview, above. When quantifying habitat disturbance for the 2023 EFH 5-year Review, the fishing effects evaluation was comprehensive, using fishing activity from vessels with all gear types to calculate cumulative impacts (Zaleski et al. 2024). We developed a time series for the 2023 Ecosystem Status Reports using vessel data from 2003, when widespread VMS data became available, through August 2022 (Ferriss 2023, Siddon 2023). The time series for the BS shows a declining trend, though that is driven largely by the estimates of disturbance in the Southern BS compared to the Northern BS (Figure 5-2). The time series for the GOA shows a very slight decrease in estimated habitat disturbance (Figure 5-3). These decreases could represent gear modifications, shifts in gear types, and changes in effort over time, and could represent a foreseeable decreasing trend.

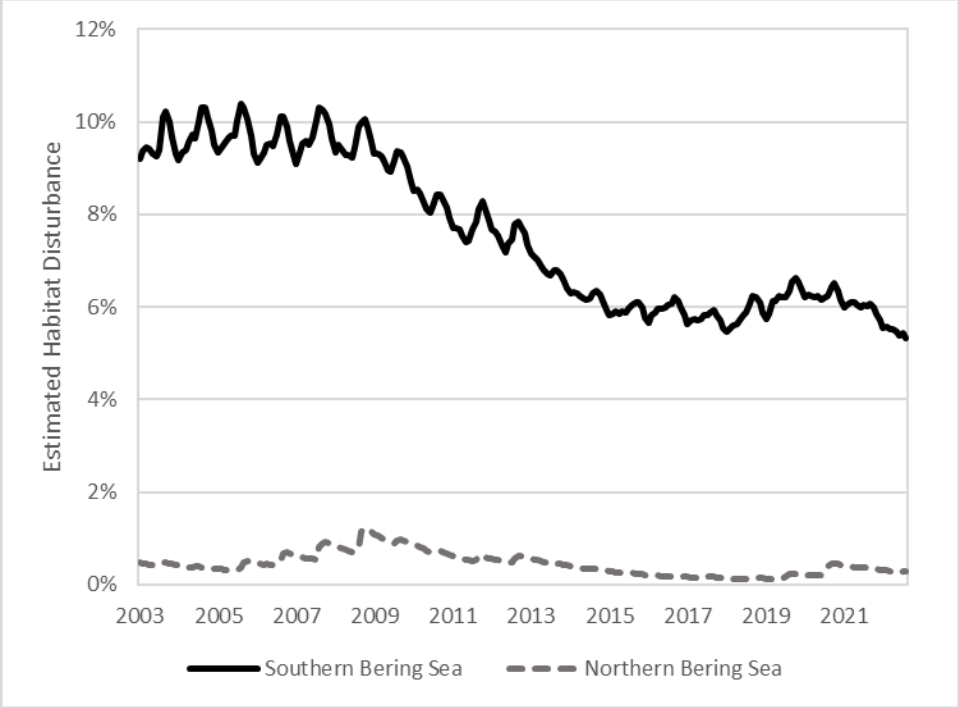

Figure 5-2 A time series of the estimated % habitat disturbance by all commercial fishing gear in the southern (solid black line) and northern (dashed gray line) BS (January 2003 – August 2022). The southern and northern BS regions were delineated at latitude 60°N (from Siddon 2023).

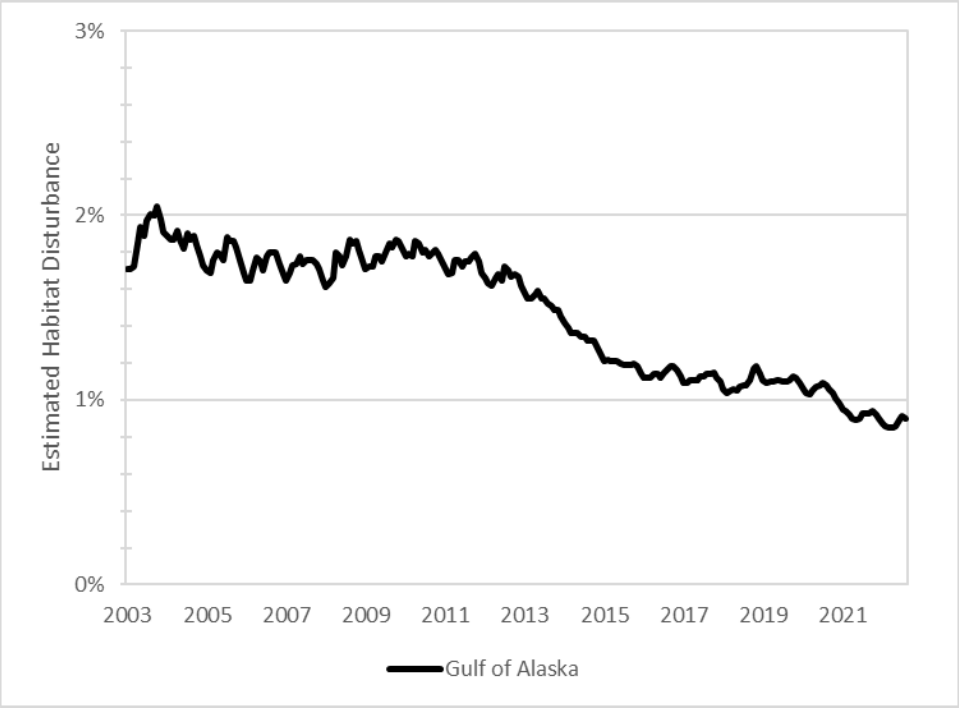

Figure 5-3 A time series of the estimated % habitat disturbance by all commercial fishing gear in the Gulf of Alaska (January 2003 – August 2022) (from Ferriss 2023).

Climate change: Extended periods of increased sea surface temperature (SST) can lead to marine heatwaves (Hobday et al. 2016). The GOA experienced a historic heat wave from 2014-2016, referred to as the "Warm Blob" or "The Blob" (Bond et al. 2015, Yang et al. 2019). In early 2014, the warm blob covered an area of ~ 2 million km^2, extending from Baja California to the GOA. The upper 100 m of the water column was more than 2.5°C warmer than the long-term climatological mean (1981–2010). Extreme biological impacts occurred throughout the marine ecosystem including prey availability, diet composition, shifts in distribution, and shifts in abundance (Cavole et al. 2016). As the frequency and intensity of marine heatwaves increases, biological responses and impacts, at the individual, stock, and population levels, will increase (Smith et al. 2023).

Ocean acidification is an emerging stressor in the Alaska marine ecosystem. Ocean acidification is when the ocean pH levels decrease through the uptake of anthropogenic CO_2. The cold, carbon rich waters [of the BS] are already naturally more corrosive than other regions, and are more vulnerable to changes in ocean chemistry. The Ecosystem Status Reports (ESR) included ocean acidification as an ecosystem indicator to monitor trends. In the EBS, there was a long-term decreasing trend observed for bottom pH caused by ocean acidification (Siddon 2024). A similar long-term decreasing trend of bottom pH was observed in the GOA, indicating the degradation of habitat and organisms sensitive to ocean acidification (Ferriss 2023).

Vessel noise pollution: Motorized vessels provide a large proportion of anthropogenic noise in marine habitats (Popper and Hawkins 2019). These include fishing vessels, large ships, and personal or sport craft. Low frequency underwater noise from vessels comes from mechanical vibrations, the hull interacting with water while in transit, and cavitation on propeller blades (Ross 2005, Ellison et al. 2012). Vessel noise production is increasing with increasing vessel traffic, particularly in busy shipping lanes, and vessel noise can increase the ambient noise levels over wide areas of the ocean (Hildebrand 2009, Ellison et al. 2012). Low frequency noise in fish habitats may cause temporary shifts in behavior (Celi et

al. 2016, de Jong et al. 2020), though the noise produced does not likely exceed mortality or potential mortal injury thresholds to fish (see Table 2 in Popper and Hawkins 2019).

Pelagic Trawl footrope EFP: In October 2024, the Council reviewed an application for an EFP submitted by Trident Seafoods.[26] Trident Seafoods sought an exempted Fishing Permit (EFP) to conduct a project over three calendar years to develop and test modifications to the footrope of the standard pelagic trawl used to harvest pollock in Alaska. The timeframe for the requested EFP fishing is January 1, 2025 to December 31, 2027 (3 calendar years). Fishing under this EFP will not be conducted within any protected or restricted areas that are otherwise closed to AFA and CDQ fishing under current regulations. On December 12, 2024, NMFS issued an EFP that authorizes certain vessels using trawl gear targeting pollock in the BS to test modifications to the footrope of these vessels' pelagic trawl gear. As of January 13, 2025, five vessels including four CVs and one CP vessel intend to test the modified footrope.

Considering the direct and indirect impacts of the proposed action when added to the impacts of past and present actions previously analyzed in other documents that are incorporated by reference and the impacts of the reasonably foreseeable future actions listed above, the aggregate impacts of the proposed action in Alternative 2 are determined to be minimal. This is because, as described above, there are no anticipated changes in estimated disturbance to EFH from pelagic trawl gear having the gear definition match what is currently deployed.

[26] EFP application 2024-02 is available under the Pelagic Gear heading at: https://www.fisheries.noaa.gov/alaska/resources-fishing/exempted-fishing-permits-alaska.

6 Management Considerations

6.1 Regulatory approaches for technology

NMFS has multiple ways of implementing Council management objectives. The Council could recommend that NMFS adopt very specific regulatory criteria at the possible expense of allowing future innovation and flexibility. For example, the recordkeeping and reporting regulations for eLandings in § 679.5(e) specifically list what has to be reported, how, and by whom. Another example are the specific restrictions on the locations various components are allowed under the current pelagic trawl gear definition (§ 679.2). NMFS could also identify broader management or policy goals it wants vessels to achieve and process to evaluate the degree to which gear configurations are meeting those goals, but the more general the regulations the greater the risk of ambiguity or enforcement uncertainty. For example, under the regulations governing the use of flow scales, NMFS can evaluate and approve any scales that meet a set of defined regulatory criteria (§ 679.28). This approval method works well for scales and VMS, because these are part of a well-established technology with larger international trade organizations determining what types of scales to approve for use in trade. The downside of such an approval process is it creates an additional administrative process for participants and the agency, and regulatory criteria for evaluating the effectiveness of technology can become outdated as technology changes.

Another example of a more flexible regulatory approach are the performance standards for the Catch Monitoring and Control Plan (CMCP) (§ 679.28(g)(7)). Under these regulations, a shoreside processor must meet a set of specific standards to ensure proper accounting for catch occurs and the shoreside processor submits a plan to NMFS for approval that describes how they will meet those standards.

When developing these regulations, NMFS recognized that although these plants may process the same species, they all had very different methods for accomplishing that goal. So, rather than requiring an identical plan that might not work equally well for all the processors, the agency focused on what goals needed to be accomplished and allowed the processors, with significant input from NMFS staff, to describe how they would meet those goals. Performance standards can provide benefits by allowing for innovation and plant-specific or vessel-specific process variation while still achieving the management goal. In this case, if there are new methods or technologies that achieve the desired outcome, this approach allows for those new methods to be used without the need for regulatory changes to explicitly adopt new and advancing technologies. However, performance standards require considerable thought ahead of time to ensure the standards are clearly defined and would achieve the defined management goals. In other words, performance standards are only effective if they are well written. Another downside to performance standards is they require implementation work for both the agency and the regulated entities. Communication and cooperation between the NMFS staff approving the system and the industry, especially in the first years of a program, can be time consuming.

6.2 Analysis of Regulatory Approach for Alternative 2

As revised, the current suite of options included under Alternative 2 largely maintain the existing regulatory approach to defining the limitations applicable to pelagic trawl gear. Options 1, 3, and 5 would maintain specific limitations in regulation on where metallic components and flotation would be allowable on pelagic trawl gear. These options differ in the exact location. Option 1 would allow these in the codend. Options 3 and 5 would allow flotation and metallic components, respectively, in specific portions of the net, defined by the size of the stretched mesh. Option 2 would merely remove an existing restriction from the regulatory definition and is not discussed further. Option 4 would allow instruments and corresponding flotation only for specific purposes.

Regulatory definitions can be very specific and clear at the expense of flexibility and innovation, or allow for more innovation at the expense of clarity, creating greater potential for unintended consequences. For the options included in Alternative 2, there are a couple ways NMFS could implement the Council's recommendation and preference. Either the Council could specify what types of devices qualify as "instruments" without getting into required specifications (*e.g.,* net sounders, cameras, sensors), or the Council could identify the types of information it wants to authorize vessels to collect with "instruments" and specify criteria NMFS should use to evaluate whether something should qualify.

6.3 Draft Regulations

The current definition of pelagic trawl gear contains both the general description of the gear and the specific restrictions that apply to all pelagic trawl gear. This regulatory construction, when paired with the definition of "nonpelagic trawl," creates the scenario that if a vessel using trawl gear fails to comply with any of the specific restrictions included in the pelagic trawl gear definition, the vessel could be violating subsequent regulations restricting the use of nonpelagic gear such as area and directed fishing closures.

The Office of the Federal Register (OFR) is the National office in charge of keeping the official text of Federal Laws and administrative regulations that provides technical and substantive guidance on the drafting of regulatory definitions. Substantively, the OFR advises that: 1) the main purpose of a definition is to achieve clarity without needless repetition; 2) draft the regulations (*i.e.,* requirements) first, then the definitions; 3) do not include substantive rules or requirements in a definition; 4) do not use the word "must" in a definition.

The current definition of pelagic trawl gear is the physical description of the specific type of trawl gear that is referred to in regulations as "pelagic trawl gear." Regulations that impose requirements on vessels using pelagic trawl gear or nonpelagic trawls appear elsewhere in the regulations such as § 679.22 which specifies closure areas and § 679.24 which specifies gear limitations.

Based upon the OFR guidance, NMFS recommends the regulations implementing a revised definition be restructured such that the new definition at § 679.2 includes language describing the major gear components necessary to distinguish pelagic from nonpelagic gear. NMFS recommends additional detail on specific pelagic trawl gear configuration requirements and applicable restrictions to be specified in regulations at § 679.24 regarding gear limitations.

The definition of nonpelagic trawl is an example of the recommended regulatory construction in that the definition at § 679.2 is broad (nonpelagic trawl means a trawl other than a pelagic trawl) and additional restrictions specified at § 679.24(f) require the use of modified nonpelagic trawl gear meeting specific standards by any federally permitted vessel that is used to directed fish for flatfish in in the BS or Central GOA regulatory areas or used to directed fish for groundfish in the modified trawl gear zone.

The following is an example of **potential draft** revisions to illustrate the recommended changes as described above. As is standard practice with all Council recommended actions, **NMFS would draft and prepare proposed regulations based on the final Council recommendation and the exact wording of proposed regulations deemed necessary to implement these measures could be different than the language included in this document.** Any draft regulatory language in this document would be subject to technical edits for clarity and consistency with the Council's preferred alternative. The following language is used only to illustrate the scope of suggested revisions to restructure the existing regulations. Additional revisions to regulatory language would be developed to implement the Council's recommended preferred alternative and further review before publication in a proposed rule.

Text highlighted in grey below is revised from what is currently published in the eCFR with a short explanation of the changes following each revision *shown as italics*.

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§ 679.2 Definitions.

* * * * *

Authorized Fishing gear (see also § 679.24 for gear limitations and Table 15 to this part for gear codes) means trawl gear, fixed gear, longline gear, pot gear, and nontrawl gear as follows:

* * *

(14) ***Pelagic trawl gear*** means a trawl that has no discs, bobbins, or rollers and has no chafe protection gear attached to the footrope or fishing line (see also gear limitations at § 679.24).

This revised definition combines sub-paragraphs (i) and (ii) of the current definition into the revised general definition of pelagic trawl gear without substantive change to the content.

* * * * *

§ 679.24 Gear limitations.

* * * * *

(b) ***Gear restrictions*** —

(2) ~~[Reserved]~~ ***Pelagic trawl gear limitations***. The operator of a vessel using pelagic trawl gear to fish for groundfish in any BSAI or GOA management area must use pelagic trawl gear that complies with the following requirements:

~~(iii)~~ (i) Except for the small mesh allowed under paragraph (14)~~(ix)~~**(vii)** of this ~~definition~~ **section**:

(A) Has no mesh tied to the fishing line, headrope, and breast lines with less than 20 inches (50.8 cm) between knots and has no stretched mesh size of less than 60 inches (152.4 cm) aft from all points on the fishing line, headrope, and breast lines and extending **past** ~~passed~~[27] the fishing circle for a distance equal to or greater than one half the vessel's LOA; or

(B) Has no parallel lines spaced closer than 64 inches (162.6 cm) from all points on the fishing line, headrope, and breast lines and extending aft to a section of mesh, with no stretched mesh size of less than 60 inches (152.4 cm) extending aft for a distance equal to or greater than one-half the vessel's LOA;

Alt 2.2 - Paragraph (B) would be removed

~~(iv)~~ (ii) Has no stretched mesh size less than 15 inches (38.1 cm) aft of the mesh described in paragraph (14)(iii) of this definition for a distance equal to or greater than one-half the vessel's LOA;

~~(v)~~ (iii) Contains no configuration intended to reduce the stretched mesh sizes described in paragraphs (14)(iii) and (iv) of this definition;

[27] This would be a technical revision to correct appropriate word use.

~~(vi)~~ (iv) Has no flotation other than floats capable of providing up to 200 lb (90.7 kg) of buoyancy to accommodate the use of a net-sounder device;

Alt 2.1 - Allow flotation in the codend
Alt 2.3 - Allow flotation aft of [5.5 inch or 15 inch] stretched mesh
Alt 2.4 - Allow flotation (up to 100 lb buoyancy) attached to instruments capable of observing, monitoring, or adjusting the fishing gear, catch, fishing activity, or fishing environment (including seafloor clearance)

~~(vii)~~ (v) Has no more than one fishing line and one footrope for a total of no more than two weighted lines on the bottom of the trawl between the wing tip and the fishing circle;

~~(viii)~~ (vi) Has no metallic component except for connectors (e.g., hammerlocks or swivels) or a net-sounder device aft of the fishing circle and forward of any mesh greater than 5.5 **[or 15]** inches (14.0 cm) stretched measure;

Alt 2.1 - Allow metallic components in the codend
Alt 2.4 - Allow instruments capable of observing, monitoring, or adjusting the fishing gear, catch, fishing activity, or fishing environment (including seafloor clearance)
Alt 2.5 - allow metallic components

Suboption 1 (forward of fishing circle) and 3 (Aft of 5.5 inch stretched mesh) are status quo and this language would be revised for technical clarity.
Suboption 2 - (aft of the fishing circle and forward of [5.5 inch or 15 inch] stretched mesh)

~~(ix)~~ (vii) May have small mesh within 32 ft (9.8 m) of the center of the headrope as needed for attaching instrumentation (e.g., net-sounder device); and

~~(x)~~ (viii) May have weights on the wing tips.

The restrictions that are currently specified in the definition of pelagic trawl gear would be moved to 679.24 and inserted to place restrictions on all persons using pelagic trawl gear to fish for groundfish.

Alt 2. Opt 1 - An approach to drafting regulation changes to implement Alternative 2, Option 1 could be to exclude the codend from the restrictions applicable to pelagic trawl gear. This could be accomplished with the addition of a new paragraph (for example, the addition of a new paragraph (ix) above) stating, "the codend is excluded from restrictions applicable to pelagic trawl gear."

Alt 2. Opt 5 - includes an option to change the 5.5 inch stretched mesh threshold to 15 inch stretch mesh.

(3) ***Trawl footrope.*** No person trawling in any GOA area limited to pelagic trawling under § 679.22 may allow the footrope of that trawl to be in contact with the seabed for more than 10 percent of the period of any tow.

(4) ***BSAI pollock nonpelagic trawl prohibition.*** No person may use nonpelagic trawl gear to engage in directed fishing for pollock in the BSAI.

6.4 Monitoring

Monitoring of vessels using pelagic trawl gear is generally conducted using tools including the North Pacific Observer Program, vessel monitoring systems (VMS) and logbooks. These monitoring programs would not be impacted by any of the alternatives or associated options. Additionally, no changes would be required in these programs as a result of these regulations. Alternative 2, Option 4 could potentially allow for collection of additional data leading to improved monitoring of pelagic trawl gear contact with

the seafloor, informing development of an updated pelagic trawl gear performance standard. However, this would require additional analysis.

6.5 Management

Regulatory revisions under Alternative 2 would have negligible, if any, impacts on management of groundfish in the BSAI and GOA. Any revisions of the regulations from options stemming from Alternative 2 is intended to clearly allow commonly used components in codends and bycatch excluder devices, allow instrumentation necessary to monitor and adjust net performance, and remove unnecessary outdated text. These changes would not likely change current fishing operations using pelagic trawl gear or the spatial location of catch. These changes would allow the regulations to better reflect current pelagic trawl gear configurations, would not conflict with any current management goals and would be in support of National Standards 5, 9, and 10.

6.6 Enforcement

This Section is authored by the NOAA Office of Law Enforcement Alaska Division.

As stated in Section 6.2 of the BSAI and GOA FMPs, a meaningful enforcement program must accompany management measures for them to be effective (NPFMC 2020a and NPFMC 2020b).

NPFMC Enforcement Committee Precepts advocate for gear restrictions that can be effectively enforced using existing detection tools such as: at-sea boardings, dockside inspections, observer reports, aerial patrols and EM technologies. Timely reporting and detection of potential violations is important for effective enforcement to prevent unlawful conduct as soon as practicable and ensure regulatory compliance. At-sea inspections are the optimal means of detecting the use of nonpelagic trawl in waters closed to that gear type in real time. For vessels not required to maintain a logbook, an EM system, or carry an observer, at-sea inspections are the most viable means of detecting violations. EM systems do not replace at-sea enforcement, but provide a secondary means of surveillance to back up a robust at-sea inspection regime.

OLE provides the following comments on the enforceability of the Council's alternatives and options.

Under current regulations (Alternative 1), one straightforward enforcement approach to gear compliance checks is to begin with inspecting the codend of a trawl net for characteristics inconsistent with the pelagic trawl gear definition, such as flotation other than that permitted per paragraph (14)(vi). If the codend has those features, it is nonpelagic trawl gear at present and there is typically no need to inspect the remainder of the trawl. Under Alternative 2, Option 1, this practice would be discontinued, as flotation, as well as metal components, in the codend would no longer be limited. Enforcement would no longer be able to use inspections of only the codend as a means to differentiate pelagic and nonpelagic trawl gear. As a result, trawl gear compliance checks are likely to necessitate inspection of portions of the trawl gear forward of the codend, which is apt to mean that inspections take longer. For instance, forward mesh requirements of pelagic trawl gear would remain unchanged and still vary greatly with pelagic trawl gear containing much larger forward mesh components than nonpelagic gear, as well as differing headrope and footrope configurations. Nonpelagic trawl gear contains discs, bobbins, or rollers as well as chafe protection in footrope gear and flotation in the headrope; in contrast, pelagic trawl gear may have no chafe protection gear attached to the footrope or fishing line and no discs, bobbins, or rollers anywhere. As regulatory definitions and features of pelagic trawl gear and nonpelagic trawl gear would still differ and be observable upon inspection, they would remain enforceable. However, inspection of forward portions of the net at-sea during haulback may increase disruption to vessel operations.

Regarding Alternative 2, Option 2, in collaboration with industry, OLE learned that parallel line, or "rope" trawls are no longer in use. Were the restriction on parallel lines (64 inch spacing attached to the

fishing line, headrope, and breast lines) removed from the pelagic trawl gear definition, and vessels were to revive the use of parallel lines, parallel line trawls would remain subject to all other applicable portions of the pelagic trawl gear definitions, such as the restrictions at (14)(i), (14)(ii) and (14)(iii)(A).

Alternative 2, Option 3 would allow the use of flotation aft of 5.5 inch or 15 inch stretched mesh. This option would make the use of some salmon excluder devices currently being employed by the fleets consistent with the pelagic trawl gear definition. Either suboption of Option 3 would be enforceable if selected. That said, OLE notes that specific regulatory requirements for salmon excluder design and location could prevent potential misapplication of flotation for non-functional "bycatch excluders" or purposes aside from those specified by Alternative 2, Option 4. In light of the Council's purpose and need statement for this action, which includes incentivizing the trawl fleet to minimize the impacts of pelagic trawl gear on bycatch, OLE further notes that salmon excluders are not currently required by regulation and are instead included only in participating BS pollock trawl vessel incentive plan agreements (IPAs), which are by design not enforced by OLE and its partner agencies.

Alternative 2, Option 4 seeks to allow the use of instruments "capable of observing, monitoring, or adjusting the fishing gear, catch, fishing activity, or fishing environment (including seafloor clearance) to be attached to pelagic trawl gear." This option would pose enforceability challenges unless parameters are placed around what constitutes an instrument or, alternatively, what impacts of pelagic trawl gear on bycatch, sensitive habitat, and unobserved mortality the Council may wish to **prevent**. There is potential that Option 4's broad language could yield unintended consequences counter to this action's purpose and need statement and management goals.

For example, OLE notes that "adjusting" denotes action, unlike the passive acts of observing and monitoring, and is open to varied interpretations and applications (i.e. instruments). Without a regulatory definition of instrument, which describes the specific allowable configurations (i.e. size, location, components, etc. of bycatch reduction devices/salmon excluders, for example), all possible designs would be allowed, provided the design was "capable of" observing, monitoring, or adjusting the fishing gear, catch, fishing activity, or fishing environment. Whether an instrument is "capable" of the aims outlined in Option 4 could also be challenging to enforce. However, should Option 4 be selected, OLE requests that the Council clarify whether bycatch excluder devices may be categorized as "instruments." OLE does not have enforcement concerns with allowing 100 lb of flotation within 6 feet of each instrument, provided clear understanding how the flotation achieves Council's intent regarding instrument function. For example, if OLE encounters pelagic trawl gear with 15 non-working instruments attached to the headrope and 100 lb of buoyancy attached to each, would the Council consider that an allowed outcome or something worthy of enforcement action? Lastly, and in any event, OLE highlights that one way to streamline inspection of instruments allowable under Option 4, given the multitude of configurations of observing, monitoring, or adjusting instruments that would be allowed, would be to require vessels to carry a current diagram of their pelagic trawl gear, indicating the location of attached instruments, flotation, and excluder devices. This would aid boarding officers and potentially shorten the duration of at-sea inspections, helping to minimize disruptions to vessel operations.

Alternative 2, Option 5 would "allow the use of metallic components" in three distinct (nonexclusive) locations of the gear: forward of the fishing circle; *and/or* aft of the fishing circle and forward of either 5.5 or 15 inch stretched mesh; *and/or* aft of 5.5 or 15 inch stretched mesh. These suboptions, in combination, cover the entirety of pelagic trawl gear (with the exception of the codend, should the Council wish to select Option 1 as a preferred alternative). OLE is generally concerned with Option 5, unless "metallic component" is defined either in form *or* with regards to an allowable function/purpose. Without some parameters regarding size, shape, and purpose, if all three suboptions of Option 5 were selected, any metal could be affixed, to achieve any purpose (including purposes potentially contrary to Council's stated management goals), anywhere on the gear, without restrictions. OLE is concerned that allowing *any* metallic component forward of the fishing circle, without indication as to form or function, could have the potential to be deployed in a manner inconsistent with Council's purpose and need "to

minimize the impacts of pelagic trawl gear on bycatch, sensitive habitat, and unobserved mortality." By way of example, the Council may wish to consider clarifying if certain metallic components (*e.g*. those needed to affix instruments such as bottom contact sensors) be allowed as connectors to affix instruments to portions of the net where metallic components would otherwise be limited (*e.g.* the footrope). The current definition already allows connectors (*e.g*. hammerlocks or swivels) and a net-sounder device aft of the fishing circle and forward of stretched mesh greater than 5.5 inches. While expanding the allowance of metal components in the middle of the net may allow for expanding the use of the instruments that are part of Alternative 2, Option 4, OLE believes that the form and/or function of metallic components should be clearly defined to facilitate enforcement of what is allowed or limited in each area of pelagic trawl gear. This request for clarity extends, also, to metallic components aft of 5.5 or 15 inch stretched mesh. In the event Option 4 is adopted, OLE suggests that the Council revise Option 5 to simply read: "In addition to connectors (*e.g*. hammerlocks or swivels), allow metallic components needed to affix the instruments allowed under Option 4." This approach would also be simpler in that there would be no need to limit such metallic components' location on pelagic trawl gear.

6.7 Safety Considerations

Alternative 2, Option 1 would allow for vessel operators to choose metal components in codend design attached to pelagic trawl gear to improve safety on deck for crewmembers when hauling in catch. Full codends exert tremendous forces on a net; without rigid metal components, meshes or lines could potentially part and injure crew members on deck.

Allowing flotation and metallic components in codends attached to pelagic trawl gear would mean that boarding officers would need to inspect other portions of the net during at-sea boardings to identify the gear type. Since the definition of pelagic trawl gear limits components at various locations throughout the net, this option may necessitate unfurling of a trawl net during at-sea boardings for inspection of forward portions of trawl nets. The further a net must be unfurled, the more time required during at-sea operations, extending potential safety risk to crew and officers performing the inspection. Likewise, any increased handling of a net while at sea during inspections and non-routine operations of the net could also increase the opportunities for damage to the net. Though some added disruption could be expected to accommodate more in-depth inspections, OLE would continue efforts to minimize disruptions to vessel operations caused by at-sea inspections.

7 Magnuson-Stevens Act and FMP Considerations

7.1 Magnuson-Stevens Act National Standards

Below are the 10 National Standards as contained in the Magnuson-Stevens Fishery Conservation and Management Act (MSA). In recommending a preferred alternative at final action, the Council must consider how to balance the national standards.

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

This action would not change existing conservation and management measures for preventing overfishing and achieving optimum yield for each fishery.

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

This document relies on the best and most recent scientific information available by reference, as well as by relying on numerous recent analyses that are based upon the best scientific information available.

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

This action contemplates specific changes to the definition of pelagic trawl gear that are intended to clearly allow commonly used components in codends and bycatch excluder devices, allow instrumentation necessary to monitor and adjust net performance, and remove unnecessary outdated text. As such, this action would not change existing management structures that govern the management of specific stocks or species groups.

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

This action would impact all vessels required to use pelagic trawl gear equally, including the BS pollock fleet and trawl vessels fishing in GOA areas closed to nonpelagic trawl gear. The action would not discriminate between residents of different states in doing so, nor would it allocate or assign fishing privileges among various U.S. fishermen.

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

The purpose and need for this action is discussed in Section 1.1. The action alternative could increase operational efficiency for pelagic trawl gear fishery participants, allowing them to use current technologies and modify and improve their gear. This action is likely to increase or maintain (versus the operational status quo) fishing efficiency for pelagic trawl gear users by easing regulatory restrictions. This could result in decreased bycatch and decreased operational costs, compared to the no action alternative.

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

The action is not expected to directly affect the variations among, and contingencies in, fisheries, fishery resources, and catches.

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

The action alternative would minimize costs by permitting pelagic trawl gear to continue being used as they are currently configured without the need to retrofit gear (see Section 1.1 for more information). The addition and associated costs of novel or innovative technologies permitted through the action, other than what is currently used by vessels, would be voluntary.

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

The action alternative would not reduce the potential for sustained participation of fishing communities in the groundfish fisheries off Alaska, because the alternative would not change fishery allocations, harvest, or delivery patterns.

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

PSC bycatch in fisheries utilizing pelagic trawl gear will continue to be managed by NMFS using traditional bycatch management tools with no change (see Section 5.2 for more information). The action alternative and associated options, specifically Option 3, Option 4, and Option 5 would allow the existing salmon bycatch excluder designs to continue to be used in pelagic trawl gear in support of National Standard 9.

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

The action alternative would permit vessel operators and fishermen the flexibility to incorporate safety measures into pelagic trawl gear as practicable, such as metal riblines in codends to prevent bursting during haulback or catch sensors attached to trawl gear that prompt vessel operators to haul back the net before it is dangerously overfilled.

7.2 Section 303(a)(9) Fisheries Impact Statement

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

The EA/RIR prepared for this plan amendment constitutes the fishery impact statement. The likely effects of the proposed action are analyzed and described throughout the EA/RIR. The effects on participants in the fisheries and fishing communities are analyzed in Chapter 4. The effects of the proposed action on safety of human life at sea are evaluated in Section 4.2, and are considered above under National Standard 10, in Section 7.1.

The proposed action affects the groundfish fisheries in the EEZ off Alaska, which are under the jurisdiction of the North Pacific Fishery Management Council. Impacts on participants in fisheries

conducted in adjacent areas under the jurisdiction of other Councils are not anticipated as a result of this action.

7.3 Council's Ecosystem Vision Statement

In February 2014, the Council adopted, as Council policy, the following:

Ecosystem Approach for the North Pacific Fishery Management Council

Value Statement

The Gulf of Alaska, Bering Sea, and Aleutian Islands are some of the most biologically productive and unique marine ecosystems in the world, supporting globally significant populations of marine mammals, seabirds, fish, and shellfish. This region produces over half the nation's seafood and supports robust fishing communities, recreational fisheries, and a subsistence way of life. The Arctic ecosystem is a dynamic environment that is experiencing an unprecedented rate of loss of sea ice and other effects of climate change, resulting in elevated levels of risk and uncertainty. The North Pacific Fishery Management Council has an important stewardship responsibility for these resources, their productivity, and their sustainability for future generations.

Vision Statement

The Council envisions sustainable fisheries that provide benefits for harvesters, processors, recreational and subsistence users, and fishing communities, which (1) are maintained by healthy, productive, biodiverse, resilient marine ecosystems that support a range of services; (2) support robust populations of marine species at all trophic levels, including marine mammals and seabirds; and (3) are managed using a precautionary, transparent, and inclusive process that allows for analyses of tradeoffs, accounts for changing conditions, and mitigates threats.

Implementation Strategy

The Council intends that fishery management explicitly consider environmental variability and uncertainty, changes and trends in climate and oceanographic conditions, fluctuations in productivity for managed species and associated ecosystem components, such as habitats and non-managed species, and relationships between marine species. Implementation will be responsive to changes in the ecosystem and our understanding of those dynamics, incorporate the best available science (including local and traditional knowledge), and engage scientists, managers, and the public.

The vision statement shall be given effect through all of the Council's work, including long-term planning initiatives, fishery management actions, and science planning to support ecosystem-based fishery management.

Upon selection of a preferred alternative, this section will include the Council's rationale for how any action recommended to the Secretary of Commerce is consistent with this ecosystem approach to policy, and highlight evidence presented for that rationale to the extent that it is available. In considering this action, the Council is being consistent with its ecosystem approach policy. The proposed action will not change the assessment or management process for the BSAI pollock fishery or any vessels using pelagic trawl gear and will not affect how targeted fisheries are harvested. This action is focused on modifying the pelagic trawl gear definition. The actions in the Council's PA seek to ensure regulations do not restrict

codend design attached to pelagic trawl gear, flotation within bycatch excluder devices, hardware attaching technology, and to remove outdated text related to parallel line trawls.

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