DRAFT FOR FINAL ACTION

Environmental Assessment/Regulatory Impact Review
For proposed
IFQ Omnibus Amendments

April 2022

For further information contact: Sara Cleaver, North Pacific Fishery Management Council
1007 West Third, Suite 400, Anchorage, AK 99501
(907) 271-2809

Abstract: This Environmental Assessment/Regulatory Impact Review analyzes several proposed management measures that would apply to fishery participants in the halibut and sablefish individual fishing quota (IFQ) fisheries off Alaska. First, the proposed management measures include changes to requirements specific to the pot fisheries, such as the biodegradable panel, pot gear configuration, gear retrieval, and pot limits, for the purpose of increasing operational efficiency for vessels in the BSAI and GOA and to reduce administrative burden. Another element of the action alternative would authorize jig gear as a legal gear type for harvesting sablefish IFQ, to increase access to entry-level fishing opportunities. Lastly, the proposed management measure would temporarily remove the Adak community quota entity (CQE) residency requirement for five years to provide more opportunity for the Adak CQE to fully harvest its allocation.

List of Acronyms and Abbreviations

Acronym or Abbreviation	Meaning
AAC	Alaska Administrative Code
ABC	acceptable biological catch
ADF&G	Alaska Department of Fish and Game
AFA	American Fisheries Act
AFSC	Alaska Fisheries Science Center
AKFIN	Alaska Fisheries Information Network
BSAI	Bering Sea and Aleutian Islands
CAS	Catch Accounting System
CDQ	Community Development Quota
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
COAR	Commercial Operators Annual Report
Council	North Pacific Fishery Management Council
CP	catcher/processor
CQE	Community Quota Entity
CV	catcher vessel
DPS	distinct population segment
E.O.	Executive Order
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	essential fish habitat
EIS	Environmental Impact Statement
ESA	Endangered Species Act
ESU	endangered species unit
FMA	Fisheries Monitoring and Analysis
FMP	fishery management plan
FONSI	Finding of No Significant Impact
FR	*Federal Register*
FRFA	Final Regulatory Flexibility Analysis
ft	foot or feet
GOA	Gulf of Alaska
HAL	Hook-and-line
IRFA	Initial Regulatory Flexibility Analysis
IFQ	Individual fishing quota
JAM	jeopardy or adverse modification
lb(s)	pound(s)
LEI	long-term effect index
LLP	license limitation program
LOA	length overall
LOF	List of Fisheries
m	meter or meters
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MMPA	Marine Mammal Protection Act
MRA	Maximum retainable amount
MSST	minimum stock size threshold
NAICS	North American Industry Classification System
NAO	NOAA Administrative Order
NEPA	National Environmental Policy Act
NMFS	National Marine Fishery Service
NOAA	National Oceanic and Atmospheric Administration
NPFMC	North Pacific Fishery Management Council
NPPSD	North Pacific Pelagic Seabird Database
NPRW	North Pacific right whale
Observer Program	North Pacific Groundfish and Halibut Observer Program
OMB	Office of Management and Budget
PBR	potential biological removal
PSC	prohibited species catch
PPA	Preliminary preferred alternative
PRA	Paperwork Reduction Act
PSEIS	Programmatic Supplemental Environmental Impact Statement
QS	Quota share
RFA	Regulatory Flexibility Act
RAM	Restricted Access Management
RFFA	reasonably foreseeable future action
RIR	Regulatory Impact Review
RPA	reasonable and prudent alternative
SAFE	Stock Assessment and Fishery Evaluation
SAR	stock assessment report
SBA	Small Business Act
Secretary	Secretary of Commerce
SPLASH	Structure of Populations, Levels of Abundance, and Status of Humpbacks
SRKW	Southern Resident killer whales
t	tonne, or metric ton
TAC	total allowable catch
TCEY	total constant exploitation yield
U.S.	United States
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
VMS	vessel monitoring system

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Executive Summary

This Environmental Assessment/Regulatory Impact Review analyzes several proposed management measures that would apply to fishery participants in the halibut and sablefish Individual Fishing Quota (IFQ) and Community Development Quota (CDQ) Programs off the coast of Alaska. The proposed management measures include changes to requirements specific to pots used to fish IFQ/CDQ, such as the biodegradable panel, tunnel opening size, gear retrieval, and pot limits. The purpose of these measures is to increase operational efficiency for vessels in the Bering Sea and Aleutian Islands (BSAI) and the Gulf of Alaska (GOA) and to reduce administrative burden. Another element of the action alternative would authorize jig gear as a legal gear type for harvesting sablefish IFQ in the GOA, and for harvesting sablefish IFQ/CDQ in the BSAI. This element is intended to increase access to entry-level fishing opportunities. The other proposed management measure would temporarily remove the Adak community quota entity (CQE) residency requirement for five years to provide more opportunity for the Adak CQE to fully harvest its allocation.

Purpose and Need

In 2017, longline pots became a legal gear type for fishing sablefish in the GOA.[1] This action also required a vessel operator using longline pot gear in the GOA sablefish IFQ fishery to retain legal size (32 inches or greater) halibut caught incidentally if any IFQ permit holder on board has sufficient halibut IFQ pounds for the retained halibut for that halibut area. In 2020, the retention of halibut in pots was authorized in the BSAI,[2] where using pots to harvest sablefish IFQ was already authorized. In the BSAI, retention of halibut in pots was not limited to incidentally caught halibut. These actions, described further in Section 1.2, afforded IFQ fishery participants the flexibility to use pot gear to fish for both IFQ halibut and sablefish; an important transition for many vessels and quota share (QS) holders to avoid killer and sperm whale depredation on hook and line (HAL) gear. Due to this regulatory flexibility, many IFQ participants in the GOA and BSAI have reconfigured their vessels or operations to use pot gear either instead of, or in addition to HAL gear. Other vessels continue to fish for IFQ sablefish and halibut with HAL gear, either because the benefits of using HAL continue to outweigh the costs of switching gear (some areas do not experience high levels of whale depredation and therefore HAL gear is more effective), or they may intend to switch gear types in the future but have not yet done so.

The analyses for the previous management changes referenced above (GOA Amendment 101 and BSAI Amendment 118) evaluated the potential socioeconomic and environmental impacts of a redistribution of effort from vessels using HAL gear to those using pot gear in the IFQ/CDQ fisheries. Since then, fishery participants have experimented with a variety of gear configurations and designs and increased their knowledge of how to improve harvesting efficiency for their operations. Testimony provided at the IFQ Committee, Advisory Panel, and Council meetings has identified the need for adjustments to management measure in the halibut and sablefish fisheries.

In April 2021, the Council adopted the following purpose and need statement to initiate this action.

IFQ stakeholders, the IFQ Committee, and NMFS have identified regulatory revisions that could increase operational efficiency, reduce administrative burden, and clarify how harvesters can meet existing regulatory requirements. In addition, the Council is considering revisions to pot limits and gear tending restrictions also identified through the recent 3-year GOA sablefish pot review to determine whether they are serving their intended purpose.

[1] 81 FR 95435, December 28, 2016; NPFMC 2016 (GOA Amendment 101)
[2] 85 FR 840, January 8, 2020; NPFMC 2019 (BSAI Amendment 118)

The Community Quota Entity (CQE) program was modified in 2014 to include the Aleutian Islands. This allowed the community of Adak to form a CQE and purchase halibut and sablefish quota. Since the implementation of the Aleutian Islands CQE in 2014, Adak has faced challenges being able to harvest its IFQ. The Council is considering temporarily broadening who is eligible to harvest IFQ held by the Adak CQE to provide more opportunities for more fully harvesting its allocation.

Alternatives

The Council adopted the following revised alternatives, elements, and options in October 2021. Additions to the April 2021 motion are shown in **bold underline** and deletions shown in ~~strikethrough~~.

Alternative 1: No action

Alternative 2: Revise IFQ program regulations to the address the following regulatory clarifications

Element 1: Clarify that "slinky pots" are a legal gear for the IFQ fishery **and CDQ fisheries**, and revise regulations to allow the use of biodegradable twine in the door latch or pot tunnel.

Element 2: Remove buoy configuration, **radar reflector,** and flagpole requirements in regulation but retain "LP" marking requirement.

Element 3: Authorize jig gear as a legal gear type for the harvest of sablefish IFQ **and CDQ**.

Element 4: Revise the pot gear configuration requirements to remove the nine-inch maximum width of tunnel opening so it does not apply when a vessel **begins a trip with** ~~has~~ unfished halibut IFQ onboard.

Option: Remove the nine-inch maximum width of the tunnel opening for vessels targeting IFQ sablefish.

Element 5: Pot Limits

Option 1: Change the Pot Limit for Western Yakutat and/or Southeast Outside to
Suboption a) 160 pots per vessel
Suboption ~~a~~**b**) ~~180~~ **200** pots per vessel
Suboption ~~b~~**c**) 300 pots per vessel

Element 6: Gear Retrieval requirements

Option 1: Remove the gear retrieval requirement
Option 2: Modify the gear retrieval requirement to 7 days for all GOA areas
Suboption: 3 days in SEO

Alternative 3: Remove Adak CQE residency requirement for a period of five years.

Note: Alternatives 2 and 3 are not mutually exclusive.

Comparison of Alternatives and Impacts

The alternative and elements included in this action, while specific to the IFQ/CDQ Programs, can be logically grouped based on the directly regulated participants, and those who could potentially be affected by associated impacts. In analyzing the impacts of the alternatives, it is helpful to think of the alternatives and elements in the following ways:

Alternative 1- status quo, would maintain current gear requirements for participants who use pot gear to fish sablefish and halibut IFQ. This alternative would provide no additional flexibility in terms of specific gear configurations, pot limits, and gear retrieval requirements, which could hinder the ability of harvesters to efficiently harvest IFQ. Alternative 1 would also retain the status quo that jig gear is not authorized for the harvest of sablefish IFQ/CDQ, which offers less flexibility (when compared to Alternative 2) for IFQ holders to choose gear most suitable to their sablefish harvesting operations. Lastly, Alternative 1 would maintain the Adak CQE residency requirement and would require that an individual must have maintained domicile in Adak for 12 consecutive months to be an eligible community resident and receive QS from a CQE. Alternative 1 is further described in Section 2.1.

Alternative 2 -Use of Pot Gear in IFQ Fishery (Elements 1, 2, 4, 5, 6)

Elements 1, 2, 4, 5, and 6 under Alternative 2 are applicable to fishery participants using pots to harvest IFQ/CDQ. There exist several nuances regarding the way each element applies to each management area, and how the elements apply to fishing for sablefish or halibut IFQ (see Section 2.2 and Table 2-1). Element 1 and the option under Element 4 would apply to the GOA and BSAI, while Elements 2, 4, 5, and 6 would be specific to the GOA. These elements would provide increased operational flexibility for vessel operators using pot gear to fish for IFQ/CDQ sablefish and halibut. It is also expected that Elements 5 and 6 could increase the potential for gear conflicts between the pot and HAL fleets if vessels using pots to fish IFQ increase their footprint on the fishing grounds in the GOA. Alternatively, Section 4.7.5 explains how some of these elements could increase harvesting efficiency for some vessels in such a way that the amount of time pot gear is deployed on the fishing grounds could decrease. This could minimize the fishing footprint and ultimately minimize the likelihood of gear conflicts with HAL vessels. However, data are lacking to determine the likelihood of gear conflicts and magnitude of potential impacts, as the impacts are partially dependent upon fishing behavior, which can be difficult to predict. As described in Section 4.9, implementing elements that are consistent across areas could also improve enforceability and compliance. Environmental impacts of these elements (Section 5) mainly relate to potential changes in catch composition but are difficult to quantify based on limited data. Section 4.9 highlights some of the data collection and reporting difficulties regarding the use of pot gear in the IFQ fisheries, and potential avenues for navigating these challenges.

The action analyzed in this document provides additional flexibilities for harvesters fishing IFQ/CDQ with pot gear, in response to testimony and the experiences of fishery participants using pot gear thus far. Therefore, the analysis of Elements 1, 2, 4, 5, and 6 focuses on any incremental increase in the use of pot gear to harvest sablefish and halibut IFQ/CDQ that would occur as a result of this action when compared with the current status of regulations for pot gear used to fish IFQ/CDQ. The scope of this document is described further in Section 3.

Alternative 2- Authorize jig gear for sablefish IFQ (Element 3)

Alternative 2, Element 3 would authorize jig gear as a legal gear type for the harvest of sablefish IFQ in the GOA, and for the harvest of sablefish IFQ/CDQ in the BSAI. Similar to the other elements under Alternative 2, this element would offer increased flexibility for sablefish QS holders to harvest IFQ/CDQ in a way that is most effective for their operation. It is likely that impacts of this element would be limited to a small group of IFQ/CDQ holders.

For the purposes of decision-making, it is also important to consider how elements under Alternative 2 could cumulatively impact fishery participants and the environment. Section 4.7.6 highlights some scenarios that could occur if certain elements are selected together or separately, and the potential impacts that could result from these interactions.

Alternative 3- Adak CQE Residency Requirement

Alternative 3 would allow Adak Community Development Corporation (ACDC), the non-profit who has purchased and holds halibut and sablefish IFQ for use by residents of Adak, to lease QS to non-residents on an annual basis for five years, in an effort to increase utilization of CQE-held quota and stimulate a stable fishing economy in the community.

Broadly, changes to the document from the October 2021 version include:

- Updates throughout the document to reflect Council's revisions to Alternatives and Elements (Sections 2.2 and 4.3)
    - Inclusion of CDQ data
    - Including the elimination of radar reflectors under Element 2
    - Clarification on the scope of Element 4 and associated impacts
    - Changes to proposed pot limits under Element 5
- Additional information included from sablefish pot review (NPFMC 2021) on vessel size by area (Section 4.5.2)
- Additional clarification on the scope of analysis for Alternative 2 (Section 3)
- Addition of 2021 data as available
- Updates on monitoring, enforcement, and reporting from NMFS (Section 4.9)
- Description of affected small entities for Regulatory Flexibility Act (Section 4.9)
- Pacific Halibut Act Considerations (Section 6.2)
- National Environmental Policy Act (NEPA) Summary (Section 5.6)
- Consistency of the Alternatives with National Standards (Section 6.1)

1 Introduction

This Environmental Assessment/Regulatory Impact Review analyzes several proposed management measures that would apply to fishery participants in the halibut and sablefish individual fishing quota (IFQ) fisheries off Alaska. First, the proposed management measures include changes to requirements specific to the pot fisheries, such as the biodegradable panel, pot gear configuration, gear retrieval, and pot limits, for the purpose of increasing operational efficiency for vessels in the BSAI and GOA and to reduce administrative burden. Another element of the action alternative would authorize jig gear as a legal gear type for harvesting sablefish IFQ, to increase access to entry-level fishing opportunities. The last proposed management measure would temporarily remove the Adak community quota entity (CQE) residency requirement for five years to provide more opportunity for the Adak CQE to fully harvest its allocation.

An EA/RIR provides assessments of the environmental impacts of an action and its reasonable alternatives (the EA), the benefits and costs of the alternatives, the distribution of impacts, and identification of the small entities that may be affected by the alternatives (the RIR). This EA/RIR addresses the statutory requirements of the Magnuson Stevens Fishery Conservation and Management Act (MSA), the National Environmental Policy Act (NEPA), Presidential Executive Order 12866, and some of the requirements of the Regulatory Flexibility Act (RFA). An EA/RIR is a standard document produced by the North Pacific Fishery Management Council (Council) and the National Marine Fisheries Service (NMFS) Alaska Region to provide the analytical background for decision-making.

This EA is being prepared using the 2020 CEQ NEPA Regulations. The effective date of the 2020 CEQ NEPA Regulations was September 14, 2020, and reviews begun after this date are required to apply the 2020 regulations unless there is a clear and fundamental conflict with an applicable statute. 85 Fed. Reg. at 43372-73 (§§ 1506.13, 1507.3(a)). This EA began on April 14, 2021 and accordingly proceeds under the 2020 regulations.

1.1 Purpose and Need

In April 2021, the Council adopted the following purpose and need statement to originate this action.

IFQ stakeholders, the IFQ Committee, and NMFS have identified regulatory revisions that could increase operational efficiency, reduce administrative burden, and clarify how harvesters can meet existing regulatory requirements. In addition, the Council is considering revisions to pot limits and gear tending restrictions also identified through the recent 3-year GOA sablefish pot review to determine whether they are serving their intended purpose.

The Community Quota Entity (CQE) program was modified in 2014 to include the Aleutian Islands. This allowed the community of Adak to form a CQE and purchase halibut and sablefish quota. Since the implementation of the Aleutian Islands CQE in 2014, Adak has faced challenges being able to harvest its IFQ. The Council is considering temporarily broadening who is eligible to harvest IFQ held by the Adak CQE to provide more opportunities for more fully harvesting its allocation.

1.2 History of this Action

History Relating to Regulations for Pots Used to Fish IFQ and Jig Gear (Alternative 2)

In 2017, longline pots became a legal gear type for sablefish in the GOA in response to increased whale depredation in the HAL fishery under Amendment 101 (81 FR 95435, December 28, 2016; NPFMC 2016). The Council's motion included pot limits, gear retrieval requirements, gear specifications, and a

provision to allow the retention of incidentally caught halibut.[3,4] Similarly, in 2020, single and longline pot gear became a legal gear type for halibut in the BSAI under Amendment 118 (NPFMC 2019) to allow for more efficient harvest of the halibut resource by decreasing the wastage of legal-size halibut discarded in the BSAI sablefish pot fishery, and to allow for the possibility of reducing whale depredation of halibut on HAL gear (85 FR 840, January 8, 2020).

The GOA sablefish pot review summarized 3-4 years of fishery data, as well as information gathered from speaking with fishery participants, managers, and stock assessment scientists (NPFMC 2021). The review and subsequent testimony highlighted aspects of fishery management that could be improved. Several testifiers and IFQ Committee members (at the March 2021 IFQ meeting and the April Council meeting) noted that some concerns held during the development of Amendment 101 were not realized to the extent they had anticipated. This was mainly regarding smaller HAL vessels being excluded from the fishery due to the deck space, stability, and power needed to convert a vessel to pots, and the magnitude of grounds preemption issues between pot and small HAL vessels. Some of these concerns were alleviated after more experience with a dual-gear fishery, and due to the development of lightweight, collapsible, tunnel-shaped "slinky" pots. The development of slinky pots added to the significant increase in the use of pot gear over the last few years of the fishery, as these pots could be used on smaller vessels that otherwise would have been unable to use the larger and heavier conventional pots. Additional information on size of vessels used in the fishery and information on slinky pots is included in Section 4.5.2.

During the GOA sablefish pot review, some participants noted their desire for changes to loosen regulations, such as pot limits, be made incrementally, and for the Council to proceed with caution to continue mitigating the likelihood of gear conflicts and grounds preemption issues. Additionally, in June 2020, the Council received public comment asking for jig gear to be authorized for the harvest of sablefish IFQ. In response, the Council initiated this analysis to revise several regulatory components of the IFQ Program.

The Council received the initial review of this analysis in October 2021, revised the alternatives as shown in Section 2, and released the analysis for final action. The Council did not select a preliminary preferred alternative (PPA) at that time.

History Relating to Adak CQE Residency Requirement (Alternative 3)

In 2014, NMFS published regulations to implement Amendment 102 to the BSAI Groundfish FMP (79 FR 8870, February 14, 2014). This amendment and accompanying regulations allowed an eligible community in the Aleutian Islands to establish a non-profit organization as a CQE to purchase halibut catcher vessel QS assigned to Area 4B and sablefish QS assigned to the Aleutian Islands. This was in direct response to a proposal from the Adak Community Development Corporation (ACDC) to modify the existing CQE Program to use revenues generated from its holdings of Western Aleutian Islands golden king crab to purchase Area 4B halibut and Aleutian Islands sablefish QS for use by fishery participants delivering to Adak, AK. ACDC has since become the CQE for Adak.

[3] https://npfmc.legistar.com/View.ashx?M=F&ID=3702492&GUID=2A0DE356-9E58-4E4C-A066-30DF11E98296

[4] In November 2015, the Council wrote a letter to the International Pacific Halibut Commission (IPHC) requesting an amendment to make pot gear legal gear for halibut in IPHC areas overlapping the GOA.4 The Council did not define "incidental," but in its letter assured the IPHC that it would monitor the amount and size of halibut caught in GOA sablefish pots so that it would be equipped with the information necessary to limit retention should it become an issue for the IPHC in the future. The IPHC responded favorably to the Council's request and, at its January 2016 Annual Meeting, took action to make longline pot gear legal for halibut retention in all areas off Alaska provided such retention was authorized by NMFS.

A general requirement for the GOA CQE Program is that CQE-held QS can only be leased to individuals who have been residents of the community for the previous 12 months. In support of Adak's efforts to use CQE opportunities to attract individuals to establish residency in the community, however, the amendment included an exemption for the community of Adak from the residency requirement for the first five years after the Adak CQE was established. As of March 17, 2019, this requirement expired. Therefore, this exemption was offered through the 2014-2018 IFQ fishing seasons.

While ACDC has prioritized the leasing of community held quota to residents through their quota distribution criteria, Adak has continued to experience a decline in population, and the closure of the processing plant in Adak has further hampered the community's ability to develop a healthy fishing economy and retain eligible community residents (Section 4.5.4). According to CQE annual reports, a large amount of the CQE QS held by ACDC went unleased and/or unharvested in 2019, 2020, and 2021 (ACDC 2019; ACDC 2020; ACDC 2021).

In early 2021, the Council and IFQ Committee received public testimony from ACDC pertaining to the difficulty the CQE has experienced in recent years when trying to lease CQE-held IFQ to eligible individuals and place non-vessel owners as crew on Adak-based vessels. The testimony included a request for an emergency regulation to suspend the residency requirement applicable to the Adak CQE Program for 2021 to mitigate the impacts of the COVID-19 pandemic on the community. Despite the Council's support, NOAA Fisheries denied this request, since it did not meet a criterion for emergency regulations that it be an unanticipated event that requires immediate attention.

In April 2021, the IFQ Committee and the Council recommended this analysis to lift the Adak CQE residency requirement for a temporary period to provide additional flexibility for Adak to establish a rebuilding period to get back to a fully resident-harvest fishery. In October 2021, the Council received the initial review and released the analysis for final action with no changes to Alternative 3. Revisions to Alternative 2 were included in the Council motion as shown in Section 2.

1.3 Description of Management Area

Figure 1-1 shows an overlay of the NMFS groundfish management areas that are referred to in Federal regulations and the Council's Fishery Management Plans (FMPs), and the eight IPHC regulatory areas (2C-4E) for waters off Alaska.

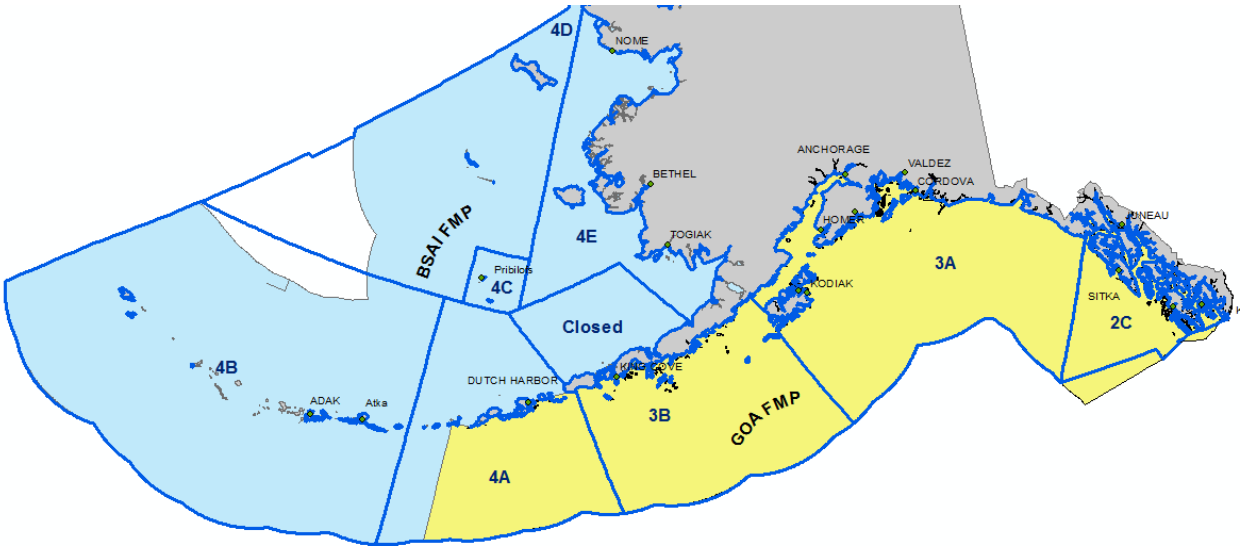


Figure 1-1 Overlay of Federal groundfish Fishery Management Plan (FMP) areas with IPHC regulatory areas.

Note: The BSAI FMP management area is blue and the GOA FMP management area is yellow.

The GOA includes all waters in the exclusive economic zone (EEZ) along the southeastern, southcentral and southwestern coasts of Alaska from Dixon Entrance to Unimak Pass. The GOA Fishery Management Unit is subdivided for management purposes into three regions; the Western GOA (WGOA/WG), Central GOA (CGOA/CG) and Eastern GOA (EGOA). For the purposes of this analysis, some of the tables will refer to the WGOA (610), CGOA (620 and 630), Western Yakutat (WY) District (640), and the Southeast (SE) District (650), shown in Figure 1-2. The BSAI is split into the Bering Sea (BS) and Aleutian Islands (AI).

Noting that the BSAI/GOA groundfish management areas differ from the IPHC areas for halibut management, any parts of this action that pertain to halibut in the GOA are intended to apply to IPHC Areas 2C, 3A, and the part of Area 4A that overlaps with the GOA Groundfish areas (Figure 1-1), unless otherwise noted. For ease of interpretation, throughout the analysis data from Area 4A are all categorized in the BSAI, while GOA data include data only from Areas 2C, 3A, and 3B.

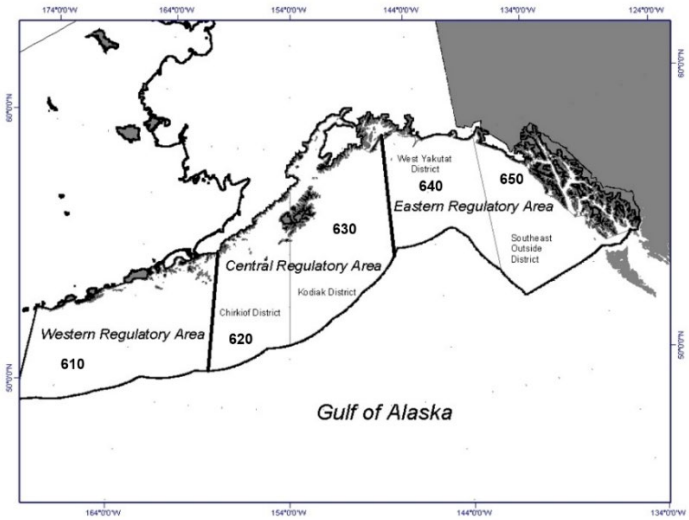


Figure 1-2 Regulatory and reporting areas in the GOA

2 Description of Alternatives

NEPA requires that an EA analyze a reasonable range of alternatives consistent with the purpose and need for the proposed action. The alternatives in this chapter were designed to accomplish the stated purpose and need for the action. The alternatives were designed to increase operational efficiency, reduce administrative burden, clarify how harvesters can meet existing regulatory requirements, and provide more opportunities for the Adak CQE to more fully harvesting its allocation.

In October 2021, the Council adopted the revised alternatives below. Additions to the April 2021 motion are shown in **bold underline** and deletions shown in ~~strikethrough~~.

Alternative 1: No action

Alternative 2: Revise IFQ program regulations to the address the following regulatory clarifications

Element 1: Clarify that "slinky pots" are a legal gear for the IFQ fishery **and CDQ fisheries**, and revise regulations to allow the use of biodegradable twine in the door latch or pot tunnel.

Element 2: Remove buoy configuration, **radar reflector,** and flagpole requirements in regulation but retain "LP" marking requirement.

Element 3: Authorize jig gear as a legal gear type for the harvest of sablefish IFQ **and CDQ**.

Element 4: Revise the pot gear configuration requirements to remove the nine-inch maximum width of tunnel opening so it does not apply when a vessel **begins a trip with** ~~has~~ unfished halibut IFQ onboard.

Option: Remove the nine-inch maximum width of the tunnel opening for vessels targeting IFQ sablefish.

Element 5: Pot Limits

Option 1: Change the Pot Limit for Western Yakutat and/or Southeast Outside to
Suboption a) 160 pots per vessel
Suboption ~~a~~**b**~~) 180~~ **200** pots per vessel
Suboption ~~b~~**c**) 300 pots per vessel

Element 6: Gear Retrieval requirements

Option 1: Remove the gear retrieval requirement
Option 2: Modify the gear retrieval requirement to 7 days for all GOA areas
Suboption: 3 days in SEO

Alternative 3: Remove Adak CQE residency requirement for a period of five years.

Note: Alternatives 2 and 3 are not mutually exclusive.

The sections below describe current regulations and status quo of issues relevant to the alternatives and elements above, as well as some of the considerations carried through to the analysis.

2.1 Alternative 1: No action

Under Alternative 1, the IFQ fisheries in the BSAI and GOA would be required to operate as described in regulation. The status quo (Alternative 1) corresponding to each element under Alternative 2 is described in this section and summarized in Table 2-1.

Use of Pot Gear in Fishery (Elements 1, 2, 4, 5, 6)

Slinky Pots and the Biodegradable Panel (Element 1)

With the adoption of pots as legal gear for sablefish, fishermen have developed and are increasingly using lightweight, collapsible slinky pots (described in Section 4.5.2). NMFS has clarified that slinky pots may be used in the IFQ fisheries as long as the pot is equipped with an 18-inch biodegradable panel as described below.

Currently, U.S. Federal regulations at 50 CFR 679.2(15)(i)) require:

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.

With the development of slinky pots, this regulation has been met by sewing in one or two full biodegradable panels into the side of the slinky pot, which presumably ends up parallel to and within 6 inches of the seafloor. In the event the pot is lost or abandoned, the biodegradable mesh degrades, leaving a hole which is parallel to and along the side of the pot.

While round, tunnel-shaped "slinky pots" do not have a distinct top or bottom, NMFS has concluded that it is possible to configure slinky pots to comply with the regulation. Each 18" panel must be sewn into the mesh covering the frame of a tunnel-shaped pot on the curved surface of the pot (not on a tunnel end).

Some fishery participants have inquired as to whether this concept will work with the slinky pot *doors*, whereby the door would be held closed using a biodegradable line and then the door would need to swing open. Current regulation stipulates a *panel* that is biodegradable, and NMFS has interpreted this to be different than a *door latch.*[5] With the goal of providing consistent regulatory guidance to the IFQ fleet, NMFS Office of Law Enforcement has reviewed the regulation and, with other Agency input, determined that the proposed slinky pot door opening does not meet the current regulatory requirement. Therefore, under the existing regulation and under the no action alternative, **wrapping the door closure of a pot with untreated cotton thread does not meet the regulatory definition of a biodegradable panel for any type of pot.**

Buoy Configuration and Flagpole Requirements (Element 2)

Under the status quo/no action alternative, each end of a set of longline pot gear deployed to fish IFQ sablefish in the GOA must have attached a cluster of four or more marker buoys including one hard buoy ball marked with the Federal Fisheries Permit (FFP) number of the vessel deploying the gear or the Alaska Department of Fish & Game vessel registration number, the capital letters "LP", a flag mounted on a pole, and radar reflector (usually attached to the flagpole) floating on the sea surface. Note that other longline pot gear (gear not used for sablefish IFQ in the GOA) is only required to have marker buoys marked with the FFP or ADF&G number.

Tunnel opening (Element 4)

[5] https://www.fisheries.noaa.gov/alaska/commercial-fishing/longline-pot-gear-gulf-alaska-ifq-sablefish-fishery-frequently-asked

Regulations at 50 CFR 679.2(15)(ii) state that each pot used to fish for groundfish must be equipped with rigid tunnel openings that are no wider than nine inches (22.86 cm) and no higher than nine inches (22.86 cm), or soft tunnel openings with dimensions that are no wider than nine inches (22.86 cm). In the BSAI, vessels that are fishing halibut or sablefish IFQ/CDQ are exempt from this requirement when the vessel has unfished halibut IFQ/CDQ onboard.[6]

Pot Limits (Element 5)

Vessels that fish sablefish using pots must adhere to pot limits which are specific to each subarea. Current pot limits across the GOA are as follows: SE- 120; WY- 120; WG - 300; CG- 300. There are no pot limits in the BSAI.

Gear Retrieval Requirements (Element 6)

Current gear retrieval requirements are as follows:

- In SE, catcher vessels (CVs) must remove the gear from the fishing grounds when making a sablefish landing, and catcher processors (CPs) must remove the gear from the grounds within 5 days.
- WY/CG - 5 days
- WG - 7 days
- BSAI - no gear retrieval requirements.

Jig gear (Element 3)

Currently, jig gear may not be used for sablefish in the GOA and BSAI, only halibut.[7] Jig gear is also not a legal gear type for the harvest of sablefish CDQ. Section 4.9.1 includes a detailed description of status quo regulations for jig gear.

Adak CQE Residency Requirements

The CQE residency requirements at 50 CFR 679.41 for the Adak CQE would remain in place. An individual applying to receive IFQ from QS held by a CQE must be an eligible community resident of the eligible community in whose name the CQE is holding QS. An eligible community resident as related to this action would be defined as any individual who:

(i) Is a citizen of the United States;

(ii) Has maintained a domicile in a rural community listed in Table 21 to this part for the 12 consecutive months immediately preceding the time when the assertion of residence is made, and who is not claiming residency in another community, state, territory, or country; and

(iii) Is an IFQ crew member except when that person is receiving halibut or sablefish IFQ that is derived from QS held by a CQE on behalf of an eligible community in the Aleutian Islands.

Additionally, regulations at 50 CFR 679.41(g)(6) states that IFQ derived from QS held by a CQE on behalf of an eligible community: (ii) In the Aleutian Islands subarea may be used by any person who has

[6] 50 CFR 679(15)(iii) *Halibut retention exception.* If required to retain halibut when harvesting halibut from any IFQ regulatory area in the BSAI, vessel operators are exempt from requirements to comply with a tunnel opening for pots when fishing for IFQ or CDQ halibut or IFQ or CDQ sablefish in accordance with §679.42(m).
[7] https://meetings.npfmc.org/CommentReview/DownloadFile?p=130f0534-8ec8-429f-8591-34538958b459.pdf&fileName=E1%20Jig%20Gear%20for%20IFQ%20Regulatory%20Explanation.pdf

received an approved Application for Eligibility … prior to March 17, 2019 and only by an eligible community resident of Adak, AK, after March 17, 2019.

2.2 Alternative 2

Alternative 2 includes several elements that would revise IFQ program regulations. In some cases, the proposed changes to GOA requirements would create consistency with BSAI requirements; see Table 2-1 for comparison of status quo and action alternatives and applicability across areas.

Elements 1, 2, 4, 5, 6: Use of Pot Gear in IFQ Fisheries and Points of Clarification

Biodegradable Panel (Element 1, change applies to GOA and BSAI)

Under Element 1, pots used for IFQ fishing could use a biodegradable twine (untreated cotton thread no larger than No. 30) to wrap the door closure of a pot that otherwise meets regulatory requirements. Staff have analyzed this element under the assumption that the Council's intent is for this element to apply in the GOA and BSAI, **but only to slinky pots used to fish IFQ/CDQ**. If this is not the Council's intent, analysts ask the Council to clarify the scope of this element and if it should apply to all pots used to fish IFQ, including conventional pots.

Buoy Configuration and Flagpole Requirements (Element 2, change applies to GOA only)

Alternative 2, Element 2, proposes to remove current GOA requirements to have a cluster of four buoys, flagpole, and radar reflectors. Under Alternative 2, buoys would continue to be marked with the vessel's Federal fisheries permit number or ADF&G vessel registration number, and the "LP" marking requirement would be maintained. These requirements for pots used to fish IFQ in the GOA would mirror the regulations in the BSAI.

Tunnel opening (Element 4 applies to GOA, option would apply to GOA and BSAI)

Element 4 would remove the requirement for a nine-inch maximum width of tunnel opening on pot gear in the GOA, when a vessel with sablefish IFQ begins a trip with unfished halibut IFQ. Section 2.1 explains that certain vessels are already exempt from this requirement in the BSAI when harvesting halibut IFQ in single or longline pot gear, without the need to concurrently hold sablefish IFQ.

When the initial review draft was presented in October 2021, the analysts indicated that Element 4, as written at the time, would result in regulations that mirror the BSAI. In the BSAI, IFQ participants may harvest halibut in pot gear without the requirement to also have sablefish IFQ on board the vessel (NPFMC 2019; 85 FR 840),[8] essentially allowing for what has been referred to in prior documents as a "directed" halibut pot fishery in the BSAI (see Section 4.7.4 for discussion of what is meant by "directed" halibut fishing). **At that meeting, Council clarified that it did not intend to allow a "directed" halibut pot fishery in the GOA, and that in order to use a pot tunnel opening that is larger than nine inches to harvest halibut IFQ, the vessel must also have sablefish IFQ on board.**

The Council also added the language "begins a trip with" to acknowledge the possibility that a vessel may fish the last of its halibut IFQ on a trip but should retain its ability to continue fishing on that trip without changing out gear. If a vessel does not have unfished halibut IFQ at the beginning of the next trip (with the intent of fishing sablefish IFQ only), then it would be required to use pot gear that has a tunnel opening no larger than nine-inches.

In October 2021 at initial review, the Council added an option which would negate the requirement to have unfished halibut IFQ on board to be exempt from the nine-inch maximum size of tunnel opening

[8] Corrected FR 84 FR 57687.

requirement **in both the BSAI and the GOA.** The analysts have interpreted this option to mean that vessels that have sablefish IFQ on board would be authorized to use pot gear with tunnel openings larger than nine inches even if they do not concurrently possess halibut IFQ. This would allow sablefish IFQ holders in the BSAI and GOA to select for different sizes of sablefish. The potential impacts of this option are described in Sections 4.7.4 and 5.3.

Pot limits (Element 5, change applies to GOA only, no pot limits in BSAI)

Element 5 would change the pot limit for the GOA areas of WY and/or SEO to either (suboptions)160, 200, or 300 pots per vessel.

Gear retrieval requirements (Element 6, change applies to GOA only. No similar requirements in BSAI)

Alternative 2, Element 6, Option 1 would remove the GOA pot gear retrieval requirements altogether. If implemented, requirements across all GOA and BSAI areas would be consistent. Alternative 2, Element 6, Option 2 would modify the gear retrieval requirement to be 7 days for all GOA areas. The suboption would revise the pot limit in SEO to be 3 days. Current regulations require CPs in SEO to remove the gear from the grounds within 5 days. Unless the Council clarifies otherwise, the 5-day gear retrieval requirement for CPs in the SEO area will remain as status quo.

Element 3: Authorization of Jig Gear for Harvest of Sablefish IFQ and CDQ

Alternative 2, Element 3 would authorize jig gear as a legal gear type for the harvest of sablefish IFQ (GOA & BSAI) and CDQ (BSAI). Refer to Management, Monitoring, and Enforcement Considerations (Section 4.9.1) for an in-depth discussion of the regulatory requirements necessary to authorize jig gear as a legal gear type for IFQ/CDQ fisheries, and potential management impacts.

Table 2-1 Comparison of GOA/BSAI status quo regulations and potential changes to the elements under Alternative 2.

	GOA status quo Longline pots	**BSAI status quo** Single or longline pots	**Action Alternative (Alt 2)**
Element 1: Biodegradable panel	Biodegradable panel regs currently the same. Slinky pots are legal, permitting they comply with the following: *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.*		Allow the use of biodegradable twine in the door latch or pot tunnel of pots used to fish for groundfish. Regulations in GOA and BSAI would both change but would then be consistent across areas.
Element 2: Buoy and flagpole requirements	Each end of a set of longline pot gear deployed to fish IFQ sablefish in the GOA must have attached a cluster of four or more marker buoys including one hard buoy ball marked with the capital letters “LP”, a flag mounted on a pole, and radar reflector, floating on the sea surface.	One hard buoy ball marked with the capital letters “LP” and ADFG/FFP number.	Regulations would be consistent across GOA and BSAI, with one hard buoy ball marked with the capital letters “LP” and ADFG/FFP number.

	GOA status quo Longline pots	**BSAI status quo** Single or longline pots	**Action Alternative (Alt 2)**
Element 3: Authorize use of jig gear for sablefish (in GOA)	Jig gear not legal for sablefish IFQ	Jig gear not legal for sablefish IFQ nor CDQ	Jig gear would be legal in the GOA and BSAI for sablefish IFQ/CDQ
Element 4: **Tunnel opening**	*Each* pot must be equipped with rigid tunnel openings that are no wider than nine inches and no higher than nine inches, or soft tunnel openings with dimensions that are no wider than nine inches.	Limit of nine-inch maximum width of tunnel opening does not apply when vessel has unfished halibut IFQ/CDQ onboard. Use of larger nine-inch tunnel opening is not linked to possession of sablefish IFQ; anyone who holds halibut IFQ may use larger tunnel opening in BSAI.	In GOA, limit of nine-inch maximum width of tunnel opening would not apply when vessel begins a trip with unfished halibut IFQ/CDQ onboard. Vessel must also begin the trip with sablefish IFQ to use this exemption. With the option, limit of nine-inch maximum width of tunnel opening would not apply when vessel has sablefish IFQ on board. Vessel would not need to have halibut IFQ on board to use this exemption in the GOA or BSAI Regulations developed under Element 4 would be inconsistent with regulations for the BSAI.
Element 5: Pot limits	Current pot limits: SE- 120 WY- 120 WG – 300 CG- 300	No pot limits	GOA pot limits: SE- 160/200/300 WY- 160/200/300 WG-300 CG-300 BSAI – no limits
Element 6: Gear retrieval requirements	SEO CPs 5 days SEO CVs must remove the gear from the fishing grounds when making a sablefish landing WY/CGOA CV/CPs 5 days WGOA CV/CPs 7 days BSAI no requirements	No gear retrieval requirements	Option 1 – No gear retrieval requirements GOA/BSAI wide. Option 2: GOA- 7 days. BSAI- no requirement • Suboption: 3 days in SEO

2.2.1 Comparison of the Impacts of Alternatives 1 and 2

Table 2-2 provides a summary comparison of the potential impacts of Alternatives 1 and 2.

Table 2-2 Comparison of main expected impacts of Alternative 1 and 2.

	Alt 1, No action IMPACTS	Alt 2 IMPACTS
Element 1: Biodegradable panel	[Use of biodegradable twine in door latch or pot tunnel not permitted]. - Cost/time impacts on harvesters: Any pots designed not in compliance need to be reconfigured. -Potential that cutting the mesh to sew in twine may compromise the mesh of the entire pot and any catch in the pot.	[Biodegradable "latch" method]: -Environmental impacts: Depend on several factors described in Section 5.2.1. Impacts are uncertain but may not be significantly different from status quo. -Fishery participants would not need to spend time reconfiguring pots to comply with regulations (Section 4.7.1). -Reduce possibility of losing haul if pots are fished as designed (Section 4.7.1).
Element 2: **Buoy and flagpole requirements**	[Maintain buoy, flagpole, radar reflector on sablefish IFQ pots in GOA] -Additional burden specific to GOA pot fishermen to purchase, carry and deploy extra gear.	[Remove 4 buoy cluster, flagpole, radar reflectors]. -Increased stability and space on deck, decreased burden on harvesters using pots to fish IFQ in GOA (Section 4.7.2).
Element 3: Authorize use of jig gear for sablefish	[Jig gear not legal for sablefish IFQ/CDQ]. -Potential for IFQ/CDQ to go unfished if participants only use jig gear due to vessel size or other constraints -Not maximizing efficiency if it is the most suitable gear for an IFQ/CDQ holder's operation.	[Jig gear for sablefish IFQ/CDQ authorized] -Potential but unknown changes to catch composition (Section 5.3 and 5.4) -Increased ability to harvest IFQ for some participants (Section 4.7.3)

	Alt 1, No action IMPACTS	Alt 2 IMPACTS
Element 4: **Tunnel opening**	IFQ fishermen cannot target halibut or larger sablefish more efficiently.	[Limit of nine-inch maximum width of tunnel opening does not apply when vessel starts with unfished halibut IFQ/CDQ onboard. Option: remove nine-inch maximum width of tunnel opening for vessels targeting sablefish IFQ] -Increased flexibility for those who possess both sablefish and halibut IFQ to choose more efficient gear -Option would allow increased flexibility for those who hold sablefish IFQ without halibut IFQ -Potential but unquantified changes in catch/bycatch composition
Element 5: Pot limits	Harvesting operations may be inefficient for those who fish IFQ with pot gear (Section 4.7.5)	[Change the GOA Pot Limit for WY and/or SEO to: • suboption a) 160 pots per vessel • suboption b) 200 pots per vessel • suboption c) 300 pots per vessel] -Increased number of pots may increase operational efficiency. (Section 4.7.5) -Potential for increased gear conflicts with HAL gear (Section 4.7.5) -Additional pots (particularly slinky pots) may result in changes to size selectivity; currently lack data collection methods that demonstrate differences in gear (Section 4.9.1)
Element 6: Gear retrieval requirements	Harvesting operations may be inefficient for those who fish IFQ with pot gear (Section 4.7.5)	[Option 1: Remove the gear retrieval requirement Option 2: Modify the gear retrieval requirement to 7 days for all GOA areas • Suboption: 3 days in SEO] Increased operational efficiency (Section 4.7.5) Potential for increased gear conflicts with HAL (Section 4.7.5)

2.3 Alternative 3

Alternative 3: Remove Adak CQE residency requirement for a period of five years.

Alternative 3 would suspend the residency requirements applicable to the Adak Community Quota Entity (CQE) Program for 2021 (50 CFR 679.41(g)(6)(ii)) for five years, similar to the final rule which implemented the residency exemption for the first five years of the program (79 FR 8870, February 14, 2014). Regulations currently require that an individual must have maintained a domicile in a rural community for 12 consecutive months to be an *eligible community resident* and receive QS from a CQE. This alternative would allow the ACDC, the non-profit who has purchased and holds halibut and sablefish

IFQ for use by residents of Adak, to lease QS derived from CQE held halibut and sablefish IFQ to residents *and* non-residents for a period of five years. For the purposes of this action, non-residents would still be required to be a citizen of the United States.

Comparison of Alternative 1 (Status quo) and Alternative 3

The expected impacts from Alternative 3 as compared with the status quo are mainly the potential for increased ability to fully harvest CQE-held IFQ and associated socioeconomic benefits for the community of Adak. Non-residents that would like to harvest CQE-held IFQ, but who are not considered residents of Adak, are likely to benefit from an entry-level opportunity to fish IFQ without the financial burden of purchasing their own QS. Additionally, minimal indirect economic impacts to the community could also occur as a result of this action, if non-residents stay in the community and eventually become residents, or through monetary benefits from fees associated with leasing IFQ through the CQE. The practical effect of Alternative 3 depends on whether non-residents choose to lease ACDC-held IFQ, which is also influenced by maintaining processing operations in the community. Alternative 3 could help maintain access to and participation in the IFQ fisheries. No significant effects on individual participants in the IFQ fisheries, or residents of non-CQE communities, are anticipated under Alternative 3 when compared to the status quo.

2.4 Options Considered but Not Further Analyzed

One option considered, but not further analyzed, would have allowed any halibut IFQ holders to target halibut IFQ in pot gear in the GOA. As described in Section 2.2, the initial review document presented at the Council's October 2021 meeting indicated that Element 4, as written at the time, would result in regulations mirroring the BSAI, essentially allowing for a "directed" halibut pot fishery in the GOA (see Section 4.7.4 for a discussion of what is meant by "directed" halibut fishing). **The Council clarified that it did not intend to allow a "directed" halibut pot fishery in the GOA, and that in order to use pots with tunnel openings greater than nine inches to harvest halibut IFQ, the vessel must also have sablefish IFQ on board.** Therefore, the analysts have not analyzed impacts of a halibut-only pot fishery in the GOA any further than was included in the initial review draft of the analysis.

Allowing a pot fishery in the GOA which anyone with unfished halibut IFQ may use a larger tunnel size to target halibut would meet the Council's purpose and need in terms of increasing operational efficiency. However, the Council's purpose and need statement does not explicitly mention the need to increase efficiency in a way that would allow a pot fishery specific to halibut. Halibut retention in pots in the GOA was authorized for vessels that were already fishing for IFQ sablefish, as to not allow a "directed" halibut pot fishery. As some stakeholders have highlighted at the October 2021 Council meeting, a "directed" halibut pot fishery would be a significant departure from the traditional hook-and-line nature of the GOA halibut IFQ fishery.

3 Approach to Alternative 2 Analysis

As described in Section 1.2, GOA Amendment 101 allowed sablefish IFQ to be harvested in longline pot gear in the GOA (81 FR 95435). When the action was implemented in 2017, longline pot gear was also made legal for halibut retention in all areas off Alaska, provided such retention was authorized by NMFS. In February 2020, halibut retention in pots in the BSAI was authorized by NMFS through BSAI Amendment 118 (85 FR 840). These actions afforded IFQ fishery participants the flexibility to use pot gear to fish for IFQ/CDQ halibut and sablefish; an important transition for many vessel operators and QS holders to avoid whale depredation on HAL gear. Due to this regulatory flexibility, some vessel operators in the GOA and BSAI have experimented with a variety of gear configurations and reconfigured their vessels to use pot gear either instead of, or in addition to HAL gear. The number of vessels which harvested IFQ with each gear type (HAL vs pot or both) are shown in Table 3-1 (GOA) and Table 3-2 (BSAI). Since GOA Amendment 101 and BSAI Amendment 118 were implemented, many fishery participants have increased their knowledge of how to improve harvesting efficiency while using pot gear to harvest IFQ.

Table 3-1 Number of vessels that harvested IFQ (halibut and sablefish) in the GOA, by gear type

IFQ Vessels by Gear Type				
Year	# Pot vessels	# HAL vessels (includes troll and jig)	All vessels that fished GOA IFQ	Vessels that fished both pot and HAL IFQ
2014		900	900	0
2015		857	857	0
2016		847	847	0
2017	22	816	821	17
2018	23	787	794	16
2019	32	780	788	24
2020	104	723	742	85
2021	160	705	732	133

Source: NMFS Restricted Access Management (RAM) division sourced through AKFIN

Table 3-2 Number of vessels that harvested halibut and sablefish IFQ/CDQ in the BSAI, by gear type

IFQ Vessels by Gear Type				
Year	# Pot vessels	# HAL vessels (includes troll and jig)	All vessels that fished BSAI IFQ	Vessels that fished both pot and HAL IFQ
2014	4	172	176	0
2015	3	142	144	1
2016	4	144	147	1
2017	6	141	145	2
2018	9	140	147	2
2019	8	137	143	2
2020	16	95	104	7
2021	24	89	102	11

Source: NMFS Restricted Access Management (RAM) division sourced through AKFIN

The analyses for GOA Amendment 101 and BSAI Amendment 118 included the potential socioeconomic and environmental impacts of a redistribution of effort from vessels using HAL gear to those using pot

gear to harvest IFQ. The proposed action analyzed in this document provides additional flexibilities for IFQ participants, in response to testimony and the experiences of IFQ fishery participants using pot gear. Therefore (in addition to the impacts of authorizing jig gear as a legal gear type for the harvest of sablefish IFQ/CDQ (Element 3)), the impacts of Alternative 2 are based on any incremental increase in the use of pot gear to harvest sablefish and halibut IFQ that would occur as a result of this action, as well as any environmental impacts associated with changes to gear specifications operations included in the elements of Alternative 2.

The impact analyses in both the RIR and the EA are predicated on the reasoning that the expected impacts are dependent on two main factors: (1) the extent to which the flexibilities from this action encourage further participation in the pot (or jig) sector and (2) the extent to which fishery participants choose to use the flexibility provided through the elements related to gear specifications under Alternative 2 (e.g., vessels that change tunnel opening size under Element 4 or vessels that use more pots if the pot limit were increased under Element 5). Noting that fishing behavior is difficult to predict, many of the potential impacts are described qualitatively. It is through this framing that the effects on socioeconomic and environmental components have been analyzed, and these factors are discussed throughout the impact analyses.

The analysts provide estimates of the potential changes in participation by management area if the maximum number of fishery participants were to take advantage of the flexibilities afforded through Alternative 2. One caveat to these estimates is that because IFQ is assigned to an individual participant rather than a vessel, IFQ could be harvested on different combinations of vessels each year. Additionally, someone who holds only halibut QS (1,670 individuals in the GOA) could purchase some amount of sablefish QS and potentially use pot gear, although they would need to either purchase their own gear or walk onto another vessel that is already using pots. For the purposes of this action, some of the socioeconomic and environmental impacts are predicated upon the number of vessels that would use the flexibilities afforded by this action, but others are dependent upon the total amount of effort in the IFQ fisheries. Overall, the magnitude of impacts is limited because the IFQ Program functionally limits effort by limiting harvest, through the allocation of QS and through catch limits for halibut and sablefish (Section 4.5.1).

It is expected that some vessels will continue to use HAL gear into the foreseeable future. In some areas, HAL fishermen have not experienced whale depredation to the same extent as in other areas of the GOA, and in these cases, it may be expected that a higher portion of vessels continue to use HAL gear because the benefits of using that gear type outweigh the monetary costs of gear conversion.[9] Table 3-2 shows many vessels in the BSAI still use HAL gear to fish IFQ, and Table 4-7 shows that the majority of vessels in SE Alaska still use HAL to fish sablefish IFQ in the GOA.

Another group of fishery participants that fish IFQ may intend to switch gear types in the future but have not yet done so under the status quo opportunity for a variety of reasons (monetary costs, waiting to learn from others' experiences with the gear, less whale depredation in their area). While more vessels may continue to switch from HAL to pot gear, an incremental and unknown, but likely minimal number of vessels may switch to pot gear as a direct result of this action. The analysts anticipate this to be a small group because the operational flexibilities afforded Elements 1, 2, 4, 5, and 6 are unlikely to be the primary motivators driving an IFQ holder to begin fishing their IFQ with pot gear, or for an IFQ fishery participant to convert their vessel to utilize a new gear type.

The following estimates use the most updated data on current participation in the IFQ fisheries.

[9] Personal communication/public testimony, L. Behnken, 2021.

In 2021, there were 732 vessels that harvested sablefish or halibut IFQ in the GOA, and 102 in the BSAI, for a total of 782 unique vessels (Table 3-1, Table 3-2). These numbers can be used as a maximum estimate of the number of vessels that could potentially use pot gear to harvest IFQ, and the elements in Alternative 2 would apply to a portion of those vessels (depending on area, described below). However, for the reasons described above (vessel conversion costs, potential for higher CPUE with HAL gear), 782 is likely an artificially high maximum number of vessels that could take advantage of the opportunities afforded under this action. Additionally, 160 of those vessels in the GOA, and 24 of those vessels in the BSAI had already begun using pot gear to harvest IFQ as of 2021 (Table 3-1, Table 3-2). It is likely that the vessels that are already using pots to harvest IFQ are most likely to take advantage of the flexibilities afforded by this action.

Element 1 would apply to all vessels using pots to fish sablefish IFQ/CDQ in the GOA and BSAI. In 2021, this was 171 total vessels; 160 in the GOA and 19 vessels in the BSAI (noting that some vessels fished both areas) (Table 3-1, Table 3-2).

Element 2 would apply to all vessels using pots to fish sablefish IFQ in the GOA. As mentioned above, this was 160 vessels in 2021.

Element 4, which could allow IFQ holders to more effectively target halibut and large sablefish in pot gear (depending on whether the option is included), would apply to all vessels using pot gear to retain halibut in the GOA (54 vessels in 2021), and (with the option) all vessels using pot gear to fish sablefish IFQ in the GOA (160 vessels in 2021) and BSAI (19 vessels in 2021). In 2021, 215 vessels harvested **both** IFQ sablefish and halibut in the GOA. Because 54 vessels already retained IFQ halibut in pot gear in the GOA in 2021 (these vessels were also required to have sablefish IFQ on board), there are at least 161 remaining vessels that could choose to use pots to fish their halibut IFQ with a larger tunnel opening under Element 4.

Elements 5 and 6 would apply to all vessels using pots to fish sablefish IFQ in the GOA. In 2021, this was 160 vessels, but as mentioned in the discussion of Element 4, more vessels could begin fishing sablefish IFQ with pots. If all vessels that landed sablefish IFQ in the GOA in 2021 were to fish sablefish IFQ with pots in the future, this would be a maximum of 732 vessels.

Additionally, under Element 3, an unknown number of vessels may begin to use jig gear to harvest sablefish IFQ/CDQ in the GOA and BSAI. This opportunity would be available to anyone who holds sablefish IFQ/CDQ, and because IFQ may be consolidated aboard vessels, this yields further uncertainty as to how many vessels may participate. As of 2021, there were 874 sablefish IFQ holders in the GOA, and 166 sablefish IFQ holders in the BSAI. Smaller boats that cannot fish HAL or pots and have found electric reels and mechanical jigs to be effective for catching sablefish, and it is likely that these vessels would be the ones to take advantage of this opportunity. Section 4.7.3 describes various scenarios in which IFQ holders who possess a small amount of sablefish IFQ may begin to use jig gear. The environmental impacts of this additional gear type for IFQ/CDQ sablefish are analyzed in the EA along with the other elements.

4 Regulatory Impact Review

This Regulatory Impact Review (RIR) examines the benefits and costs of a proposed regulatory amendments to the IFQ Program, including several elements and options described in Section 2. The proposed action may affect IFQ QS holders and crew members, NMFS staff involved in data collection and management for the IFQ fisheries, the CQE representing the city of Adak, Alaska, and fishery participants receiving IFQ derived from QS held by the Adak CQE, processors, and the community of Adak.

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.

4.1 Statutory Authority

Under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (16 U.S.C. 1801, *et seq*.), the United States has exclusive fishery management authority over all marine fishery resources found within the exclusive economic zone (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 charged with carrying out the Federal mandates of the Department of Commerce with regard to marine and anadromous fish.

The sablefish IFQ fishery in the EEZ off Alaska is managed under the FMP for Groundfish of the GOA and under the FMP for Groundfish of the BSAI. The Council prepared the FMPs under the authority of the Magnuson-Stevens Act, 16 U.S.C. 1801 et seq. Regulations governing U.S. fisheries and implementing the FMPs appear at 50 CFR parts 600 and 679.

The IPHC and NMFS manage fishing for Pacific halibut through regulations established under the authority of the Northern Pacific Halibut Act of 1982 (Halibut Act). The IPHC develops regulations governing the halibut fishery under the Convention between the United States and Canada for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and Bering Sea. The IPHC's regulations are subject to approval by the Secretary of State with the concurrence of the Secretary. NMFS promulgates the IPHC's regulations as annual management measures pursuant to 50 CFR 300.62. The final rule implementing the 2021 annual management measures published February 18, 2021, 86 FR 13475).

The Halibut Act, 16 U.S.C. 773c (a) and (b), provides the Secretary with general responsibility to carry out the Convention and the Halibut Act. In adopting regulations that may be necessary to carry out the purposes and objectives of the Convention and the Halibut Act, the Secretary is directed to consult with the Secretary of the department in which the U.S. Coast Guard is operating, currently the Department of Homeland Security.

The Halibut Act, 16 U.S.C. 773c (c), also provides the Council with authority to develop regulations, including limited access regulations, that are in addition to, and not in conflict with, approved IPHC regulations. Regulations developed by the Council may be implemented by NMFS only after approval by the Secretary. The Council has exercised this authority in the development of the IFQ Program for the commercial halibut and sablefish fisheries, codified at 50 CFR part 679, under the authority of section 5 of the Halibut Act (16 U.S.C. 773c (c)) and section 303(b) of the Magnuson-Stevens Act (16 U.S.C. 1853(b)).

The proposed action under consideration would amend these FMPs and Federal regulations at 50 CFR 679. Actions taken to amend FMPs or implement regulations governing these fisheries must meet the requirements of applicable Federal laws, regulations, and Executive Orders. Because halibut and sablefish are managed under the authority of Halibut Act, and Magnuson-Stevens Act, respectively, any regulations applicable to the management of both must be consistent with provisions of both laws.

4.2 Purpose and Need for Action

In April 2021, the Council adopted the following purpose and need statement to originate this action.

IFQ stakeholders, the IFQ Committee, and NMFS have identified regulatory revisions that could increase operational efficiency, reduce administrative burden, and clarify how harvesters can meet existing regulatory requirements. In addition, the Council is considering revisions to pot limits and gear tending restrictions also identified through the recent 3-year GOA sablefish pot review to determine whether they are serving their intended purpose.

The Community Quota Entity (CQE) program was modified in 2014 to include the Aleutian Islands. This allowed the community of Adak to form a CQE and purchase halibut and sablefish quota. Since the implementation of the Aleutian Islands CQE in 2014, Adak has faced challenges being able to harvest its IFQ. The Council is considering temporarily broadening who is eligible to harvest IFQ held by the Adak CQE to provide more opportunities for more fully harvesting its allocation.

4.3 Alternatives

In October 2021, the Council adopted the revised alternatives below. Additions to the April 2021 motion are shown in **bold underline** and deletions shown in ~~strikethrough~~.

Alternative 1: No action

Alternative 2: Revise IFQ program regulations to the address the following regulatory clarifications

Element 1: Clarify that "slinky pots" are a legal gear for the IFQ fishery **and CDQ fisheries**, and revise regulations to allow the use of biodegradable twine in the door latch or pot tunnel.

Element 2: Remove buoy configuration, **radar reflector,** and flagpole requirements in regulation but retain "LP" marking requirement.

Element 3: Authorize jig gear as a legal gear type for the harvest of sablefish IFQ **and CDQ**.

Element 4: Revise the pot gear configuration requirements to remove the nine-inch maximum width of tunnel opening so it does not apply when a vessel **begins a trip with** ~~has~~ unfished halibut IFQ onboard.

Option: Remove the nine-inch maximum width of the tunnel opening for vessels targeting IFQ sablefish.

Element 5: Pot Limits

Option 1: Change the Pot Limit for Western Yakutat and/or Southeast Outside to
Suboption a) 160 pots per vessel
Suboption ~~a~~**b**) ~~180~~ **200** pots per vessel
Suboption ~~b~~**c**) 300 pots per vessel

Element 6: Gear Retrieval requirements

Option 1: Remove the gear retrieval requirement
Option 2: Modify the gear retrieval requirement to 7 days for all GOA areas
Suboption: 3 days in SEO

Alternative 3: Remove Adak CQE residency requirement for a period of five years.

Note: Alternatives 2 and 3 are not mutually exclusive.

4.4 Reference Documents Used for the Impact Analysis

This analysis of impacts provides a qualitative assessment supported by recent fisheries data and numerous other recent analyses and reference documents. The costs and benefits, as well as the economic impacts of this action are described in the sections that follow, by comparing the No Action Alternative 1 with the action Alternatives 2 and 3. Reference documents include a plethora of detailed information on the dynamics of the fisheries, markets, and communities associated with the impacted sectors. In particular, the description of fisheries and analysis draws from recent analyses and reports:

Environmental Assessment/Regulatory Impact Review for Amendment 101 to the FMP for Groundfish of the GOA: Allow the use of pot longline gear in the GOA sablefish IFQ fishery (NMFS 2015).

The Amendment 101 EA analyzed proposed management measures that would allow a new gear type to harvest sablefish in the GOA. The Amendment 101 summarizes the evaluations rendered for fisheries, marine resources, and ecosystem components and is referenced in this EA. This document is available from: https://www.fisheries.noaa.gov/action/amendment-101-fmp-groundfish-gulf-alaska-management-area

Review of Gulf of Alaska Groundfish Fishery Management Plan Amendment 101 to Allow Pot Longline Gear in the Sablefish IFQ Fishery (NPFMC 2021).

This document reviewed the first 3-4 years of fishery data from the GOA sablefish pot fishery. This document is available from https://meetings.npfmc.org/CommentReview/DownloadFile?p=1cee7277-52dc-405c-887b-c28d9d62ab92.pdf&fileName=D1%20GOA%20Sablefish%20Pots%20Report.pdf

Review of the Community Quota Entity (CQE) Program under the Halibut/Sablefish IFQ Program (NPFMC 2010)

The Program Review provides a summary of the CQE Program and participation in the CQE program from its inception in the late 1990s until 2010. The review outlines the criteria for community eligibility, QS holdings by CQE communities to the date the review was conducted, methods for funding QS purchase, and common issues and barriers CQEs experience. This document is available from https://www.npfmc.org/wp-content/PDFdocuments/halibut/CQEreport210.pdf.

RIR for Amendment 102 to the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Establishing a Community Quota Entity in Area 4B (NMFS 2014b)

This RIR evaluates a proposed program that would allow eligible communities located in Area 4B of the Aleutian Islands to purchase catcher vessel QS under the existing halibut and sablefish IFQ Program. The document compares a No Action alternative to an Alternative that would establish a CQE Program in Area 4B and allow a non-profit entity representing an eligible community in Area 4B (Adak) to purchase and hold Area 4B halibut QS and Aleutian Island sablefish QS, with similar qualifying criteria and operational limits as the existing GOA CQE communities. This document is available from https://repository.library.noaa.gov/view/noaa/19200.

For this analysis, tables, figures, and information from these sources were often updated using quantitative data on harvest, harvesting vessels, value, and processor activity from 2008-2020 obtained through the Alaska Fishery Information Network (AKFIN). AKFIN has access to catch accounting system (CAS) data. Total catch estimates are generated from information provided through a variety of required industry reports of harvest and at-sea discard, and data collected through an extensive fishery observer program. In 2003, NMFS changed the methodologies used to determine catch estimates from the NMFS blend database (1995 through 2002) to the catch accounting system (2003 through present). Currently, the catch accounting system relies on data derived from a mixture of production and observer reports as the basis of the total catch estimates. This analysis relies on catch estimates during years more recent than 2003. AKFIN also has access to CFEC Fish Ticket data, wholesale data from Commercial Operators Annual Reports (COAR), and Economic Data Report (EDR) data for those fisheries that provide it. As a small, remote community, Adak has few fishery participants, and some data are limited to due confidentiality. Some information was gathered from the annual CQE reports (ACDC 2019; ACDC 2020, ACDC 2021).

Additional qualitative context, where helpful, was provided by NMFS and Council staff, as well as industry fishery representatives, CQE participants, and ACDC board members. Section 7 provides a list of people consulted and Section 8 provides a full list of references.

4.5 Description of Fisheries

4.5.1 The IFQ and CDQ Programs

The fixed gear halibut and sablefish fisheries off Alaska are managed under the IFQ and CDQ programs. The 20-year review of the IFQ program was published in 2016 and provides a detailed description of the IFQ fisheries, their history, and management.[10] The Western Alaska CDQ Program Summary reviews the history of the program and overview of the CDQ program, including the regulatory landscape, allocative

[10] https://www.npfmc.org/wp-content/PDFdocuments/halibut/IFQProgramReview_417.pdf

process, and changes in CDQ investments.[11] The reader is referred to the 20-year review and the CDQ Program Summary for additional background information, however a concise overview is provided here.

The Council and NMFS developed the IFQ Program to resolve the conservation and management challenges commonly associated with open access fisheries. The Council recommended a limited access privilege program (LAPP) for the fixed gear halibut and sablefish fisheries off Alaska in 1992. NMFS approved the halibut IFQ and sablefish IFQ Programs in 1993 and implemented them on November 9, 1993 (58 FR 59375). Fishing under the IFQ Program began on March 15, 1995. The preamble to the proposed rule, published on December 3, 1992 (57 FR 57130), describes the issues leading to the Council's recommendation for the IFQ Program to the Secretary. The Council and NMFS designed the IFQ Program to provide economic stability to the commercial halibut and sablefish fixed gear fisheries and intended the IFQ Program to improve the long-term productivity of the halibut and sablefish fisheries by promoting the conservation and management objectives of the MSA and the Halibut Act; while retaining the character and distribution of the fishing fleets as much as possible. Sablefish and halibut IFQ seasons are typically set simultaneously to reduce waste and discards. The season dates have varied by several weeks since 1995, but the annual pattern for both fisheries has been from March to November.

The IFQ Program is a catch share program where participants are given a proportional annual allocation based on the amount of QS they hold, and the catch limit set by the IPHC for halibut or by the Secretary for sablefish. As described in Section 1.3, there are eight halibut IFQ regulatory areas (Figure 1-1) in Alaska, inclusive of Areas 2C through 4E. For the sablefish IFQ fishery, there are two FMP areas: BSAI and GOA. Management areas are further broken out into the Bering Sea, Aleutian Islands, Western GOA, Central GOA, West Yakutat, and Southeast. Only sablefish harvested in the EEZ are managed under the IFQ Program. State water sablefish fisheries are managed by the State of Alaska. QS was originally issued to participants based on participation in the fisheries during historical qualifying periods in each of these areas and is generally restricted to use on the size class of vessel it was originally earned on.

During the development of the IFQ Program, the Council was concerned about consolidation of ownership and divestiture of QS by coastal communities and removing small community access to and participation in the fisheries. For this reason, the Council built in several provisions to address concerns regarding transferability and the goal of preserving an owner-operated fleet. The goal was to protect small operations, part-time participants, and entry-level participants who may tend to be eliminated from rationalized fisheries because of potential excessive consolidation under the IFQ Program. The Program includes restrictions designed to prevent too many QS from falling into too few hands (ownerships caps) or from being fished on too few vessels (vessel use caps).

The Council designed a "block provision" to further guard against excessive consolidation of QS and consequent social impacts on the fishery and dependent communities. A block is a consolidation of QS units that may not be divided. Most initially issued QS that resulted in less than the equivalent of 20,000 pounds (9 mt) of IFQ (in 1994-pound equivalents) was "blocked," that is, issued as an inseparable unit. One of the primary purposes of QS blocks and the amendments to the block provisions was to conserve small blocks of QS that could be purchased at a relatively low cost by crew members and new entrants to the IFQ fisheries. The block provision reduced the amount of QS consolidation that could have occurred under the IFQ Program and slowed consolidation by restricting QS transfers. Over time, the Council and NMFS have amended the Program to remove constraints so that greater amounts of QS can be swept-up into larger amounts that could be fished more economically.[12]

Other restrictions, such as the **QS class designations**, which represent the length of vessel that is permitted to harvest that IFQ, are intended to prevent the fishery from being dominated by large boats or

[11] https://www.fisheries.noaa.gov/resource/document/western-alaska-community-development-quota-program
[12] GOA Amendment 43 (61 FR 67962, December 26, 1996), and GOA Amendment 67 (72 FR 44795, August 9, 2007).

by any particular vessel class. Under these class designations, halibut QS were originally assigned under the one of the following four vessel categories:

Class A - designated for vessels that process at sea or catcher-processors (freezer longliner vessels) and do not have a vessel length restriction;

Class B - catcher vessels greater than 60' LOA;

Class C - catcher vessels 36' to 60' LOA; or

Class D - catcher vessels 35' LOA or less.

Sablefish QS are assigned under one of three vessel categories:

Class A- catcher-processor vessels;

Class B- catcher vessels greater than 60 feet in length;

Class C- catcher vessels less than 60 feet in length.

The categories were designed to maintain a diverse, owner-operated fleet and provide more entry-level opportunities in the IFQ fisheries. The Council intended for the D class QS to be the most likely entry-level opportunity, as it was thought that entry-level fishermen would be using smaller, D class vessels (NPFMC 2016).

D class QS were originally intended, in part, to provide an affordable opportunity for skippers and crew members to buy into the fishery. According to the Twenty-Year Review (NPFMC 2016b), in Area 3A between 1995 and 2014, the mean price in dollars per IFQ pound of D class QS was lower than that of C class QS every year except 2010 (NOAA Fisheries, RAM 2015).[13] Despite this trend in Area 3A, in many years, D class QS aggregated across all regulatory areas is not the lowest price QS in the halibut IFQ fishery. This could mean that D class QS is not always the QS that is most accessible to new entrants and small operators. Additionally, fishery participants have noted that crew members looking to buy into the fishery may actually purchase C class QS and fish it on a larger boat with other QS holders rather than purchase D class QS and fish the IFQ on a smaller D class vessel. Furthermore, a relatively small amount of D class IFQ is designated in each area (6.8% in Area 3A), which affects availability of QS for new entrants.[14]

Since the implementation of the IFQ Program, numerous amendments have lifted the original vessel length landing restrictions of the QS vessel class designations. In 1996, the "fish down" provision allowed IFQ derived from larger class QS to be fished on smaller class vessels.[15] The current vessel length categories in Table 4-1 reflect the "fish-down" provision. The Council has also amended the IFQ Program to allow "fishing up" in some areas. Fishing up occurs when the IFQ derived from smaller class QS is fished on larger class vessels. Safety issues and economic hardships prompted Council action to allow these shares to be fished up on C class vessels in certain areas, such as in Areas 3B, 4B, and 4C.

[13] Price in $/IFQ factors in TAC. Due to a significant database change, 1999 data were not available. Until 2015, the NOAA Fisheries RAM Program provided regular IFQ reports that documented information on QS transfers and prices (any transaction resulting in a permanent change of ownership is considered a transfer). "Changes under Alaska's Halibut IFQ Program, 1995 – 2014", published in August 2015, provides the estimated annual prices for halibut QS sold with the associated current year IFQ, by area and year.

[14] See NPFMC 2016 for further discussion on how the IFQ Program has performed with respect to its original policy objectives, including those regarding entry opportunities.

[15] Implemented through GOA and BSAI Amendments 42 (61 FR 43312, August 22, 1996) and Federal regulations at 50 CFR 679.40(a)(5)(ii).

Table 4-1 Current harvest authority for halibut under specific vessel categories.

Vessel Category	Authority
A	May harvest and process IFQ halibut on a vessel of any length (freezer/longliners)
B	May harvest IFQ halibut on a vessel of any length
C	May harvest IFQ halibut on a vessel ≤ 60 ft LOA
D	May harvest IFQ halibut on a vessel ≤ 35 ft LOA

The western Alaska CDQ Program provides Alaska villages with the opportunity to participate and invest in fisheries in the Bering Sea and Aleutian Islands fisheries. Six nonprofit corporations represent 65 communities with the purpose of economic development in western Alaska and goals to alleviate poverty, provide economic and social benefits to residents, and achieve sustainable local economies. Legislative action under Section 305(i)(1)(C) of the Magnuson Stevens Fishery Conservation and Management Act enabled allocation to CDQ groups of groundfish, halibut, crab, and bycatch species. The allocations were implemented in 1992 for 1995 for halibut and sablefish, and 1998 for multispecies groundfish.

The MSA allocates a portion of the annual catch limit for each directed fishery of the BSAI management area to the six entities (CDQ groups) and the villages associated with each of those entities, which are specifically named in in the MSA. The CDQ groups include the Aleutian Pribilof Island Community Development Association (APICDA), the Bristol Bay Economic Development Corporation (BBEDC), the Central Bering Sea Fishermen's Association (CBSFA), the Coastal Villages Region Fund (CVRF), the Norton Sound Economic Development Corporation (NSEDC), and the Yukon Delta Fisheries Development Association (YDFDA). The CDQ groups are nonprofit corporations whose board of directors and staff manage and administer CDQ allocations, investments, and economic development projects. CDQ groups use the revenue derived from the harvest of their fisheries allocations to fund economic development activities and provide employment opportunities.

The groundfish and halibut CDQ fisheries are managed by NMFS. Federal reporting requirements for management of CDQ fisheries are incorporated into standard reporting requirements for these fisheries. These include observer coverage requirements, equipment and operational requirements, permitting requirements, the use of observer data to manage allocations, and logbook and landings reports.

The IFQ Program provides flexibility to participants by allowing them to harvest IFQ allocations at any point during the nine-month IFQ season. Despite this flexibility, landings over time in the IFQ fisheries generally follow consistent seasonal patterns (Figure 4-1, Figure 4-2) to participation of crew and IFQ holders in other fisheries, market conditions, vessel availability, seasonal employment, and other factors.

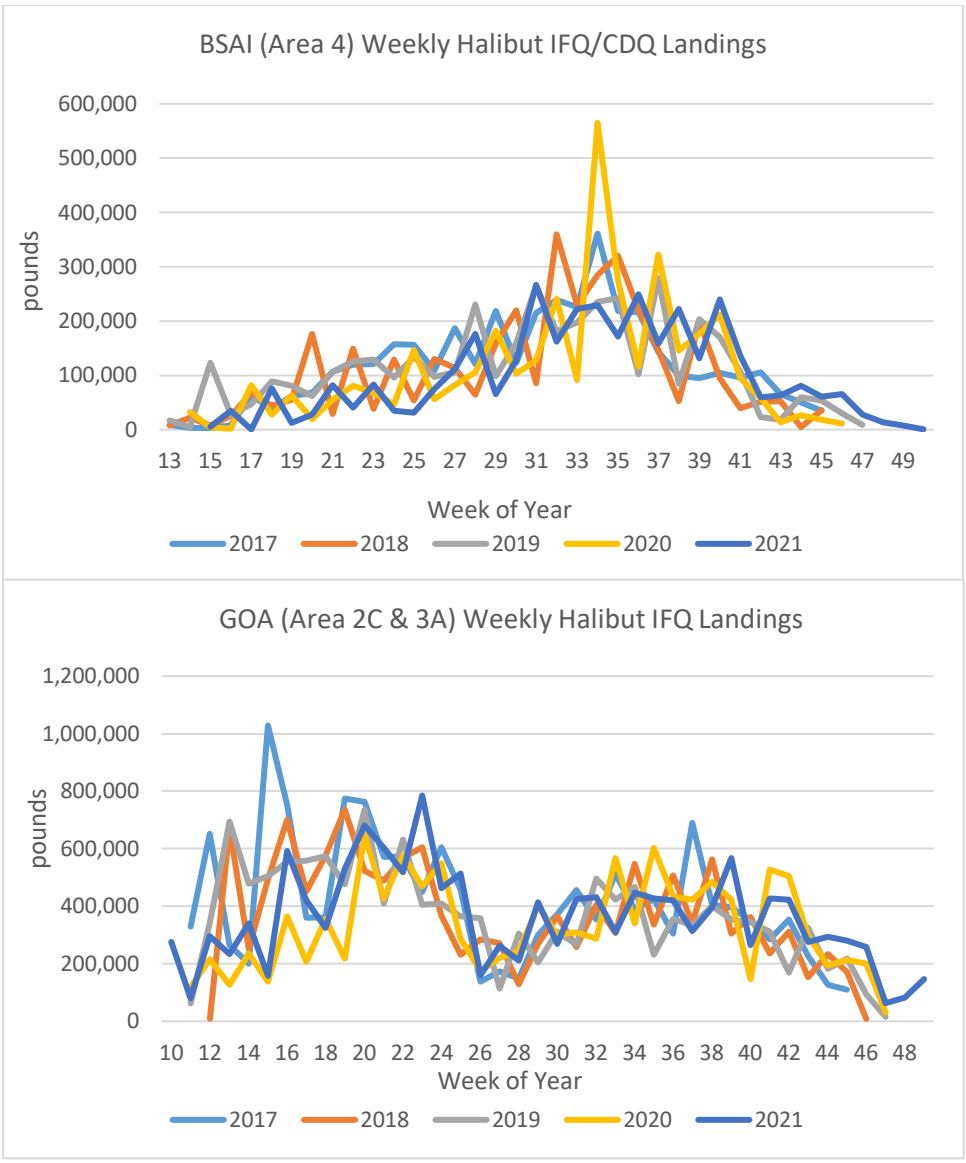


Figure 4-1 Weekly Halibut IFQ Landings, 2017-2021
Source: NMFS Alaska Region IFQ System. Accessed 1/28/2022

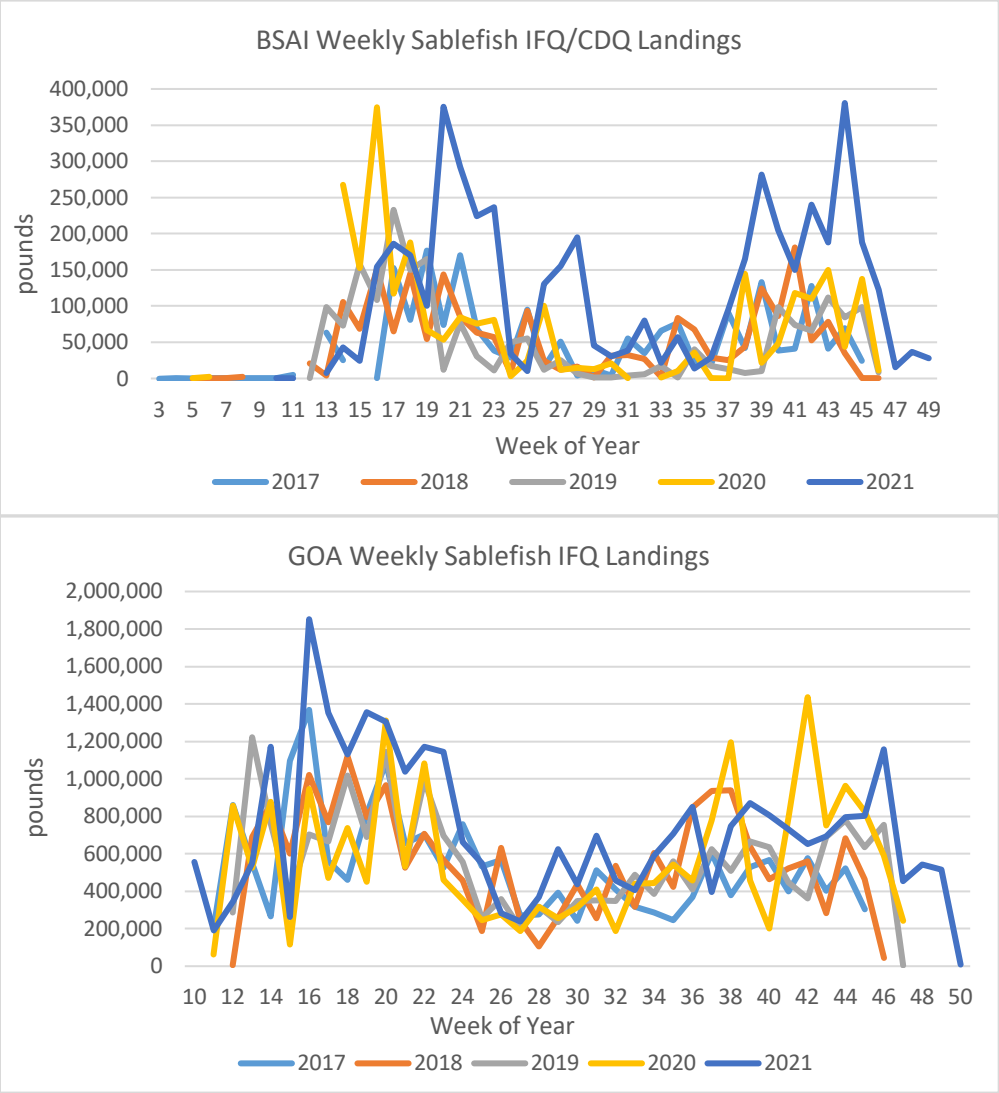


Figure 4-2 Weekly Sablefish IFQ/CDQ Landings, 2017-2021
Source: NMFS Alaska Region IFQ System. Accessed 1/28/2022

The IFQ/CDQ sablefish and halibut fisheries are fully allocated, but are not all fully harvested every year. Table 4-2 through Table 4-5 show the sablefish and halibut IFQ/CDQ allocations and percent harvested for 2021. Data from NMFS Restricted Access Management (RAM) demonstrate that in general, the halibut IFQ fishery is more fully harvested than the sablefish IFQ fishery, averaging 93% harvested across all areas versus 75% across all areas.

Table 4-2 Sablefish IFQ Allocations and Landings, 2021

Area	*Total Catch Pounds*	*Allocation Pounds*	*Remaining Pounds*	*% Landed*
AI	1,038,722	6,239,018	5,200,296	17
BS	2,216,972	2,993,847	776,875	74
CG	12,643,663	14,206,442	1,562,779	89
SE	8,205,259	10,094,863	1,889,604	81
WG	3,857,188	4,281,333	424,145	90
WY	4,742,781	5,630,548	887,767	84
Total	**32,704,585**	**43,446,051**	**10,741,466**	**75**

Source: NMFS Restricted Access Management, prepared 12/31/2021. Retrieved from https://www.fisheries.noaa.gov/sites/default/files/akro/21ifqland.htm
Notes: This report summarizes fixed gear IFQ landings reported by Registered Buyers. At sea discards excluded, confiscations included. Sablefish weights are reported in round pounds.

Table 4-3 Sablefish CDQ Allocations and Landings, 2021

Area	*Total Catch Pounds*	*Allocation Pounds*	*Remaining Pounds*	*% Landed*
AI	267	708	441	38
BS	369	340	-29	108
Total	**635**	**1,048**	**413**	**61**

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA
Note: Totals may not be exact due to rounding.

Table 4-4 Halibut IFQ Allocations and Landings, 2021

Area	*Total Catch Pounds*	*Allocation Pounds*	*Remaining Pounds*	*% Landed*
2C	3,290,345	3,530,000	239,655	93
3A	8,677,885	8,950,000	272,115	97
3B	2,410,299	2,560,000	149,701	94
4A	1,430,595	1,660,000	229,405	86
4B	624,186	984,000	359,814	63
4C/4D	819,798	885,600	65,802	93
Total	**17,253,108**	**18,569,600**	**1,316,492**	**93**

Source: NMFS Restricted Access Management, prepared 12/31/2021. Retrieved from https://www.fisheries.noaa.gov/sites/default/files/akro/21ifqland.htm
Notes: This report summarizes fixed gear IFQ landings reported by Registered Buyers. At sea discards excluded, confiscations included. Halibut weights are reported in net (headed and gutted) pounds. Data are derived from initial data entry procedures and are preliminary. Future review and editing may result in minor changes. Landings in areas 4C and 4D have been combined, since 4C allocation may be fished in 4C or 4D. Harvest is debited from the account for the reported harvest area, but the combination in this report is a better representation of activity in the 4C/4D areas.

Table 4-5 CDQ Halibut Allocation and Landings, 2021.

Area	*Total Catch Pounds*	*Allocation Pounds*	*Remaining Pounds*	*% Landed*
4B	***	246,000	***	***
4C	***	369,000	***	***
4D	396,462	221,400	-175,062	179
4E	***	194,000	***	***
Total	**692,252**	**1030400**	**338,148**	**67**

Source: NMFS Restricted Access Management, prepared 12/31/2021. Retrieved from https://www.fisheries.noaa.gov/sites/default/files/akro/21ifqland.htm.
Notes: This report summarizes fixed gear CDQ landings reported by Registered Buyers. At sea discards excluded, confiscations included. Halibut weights are reported in net (headed and gutted) pounds. 'Vessel Landings' include the number of landings by participating vessels reported by IFQ regulatory area. Each such landing may include harvests from more than one CDQ Permit Holder. 4D allocation may be fished in 4D or 4E. Harvest is debited from the account for the reported harvest area. This may cause 4E landings to appear overharvested and 4D underharvested. 4C allocation may be fished in 4C or 4D. Harvest is debited from the account for the reported harvest area. This may cause 4D landings to appear overharvested and 4C underharvested. Due to over- or underharvest of TAC and/or rounding, percentages may not total to 100%. Data are derived from initial data entry procedures and are preliminary. Future review and editing may result in minor changes. Asterisks denote confidential data.

4.5.2 IFQ pot fisheries

Expanding use of pot gear

Overall, use of pot gear is increasing in both the BSAI and GOA (Figure 4-3). Using pot gear instead of traditional HAL gear has several benefits, including avoiding whale depredation of target catch and reducing bycatch during the active fishery (described in NPFMC 2021).[16] A regulatory amendment in 1992 prohibited longline pot gear in the BS (57 FR 37906, August 21, 1992). In 1996, the prohibition on sablefish longline pot gear use was removed for the BS, except from June 1 to 30 to prevent gear conflicts with trawlers during that month (61 FR 49076, September 18, 1996). Sablefish longline pot gear was allowed in the AI during this time.

While pot fishing was common in the BSAI IFQ sablefish fishery in the 2000s, the popularity of pot fishing made a resurgence in the BSAI since the legalization of halibut retention in pot gear in 2020. On average, the percent of IFQ/CDQ sablefish catch in the BS taken by pot gear was:

- 74% from 2003-2009,
- 66% from 2010-2016
- and 86% from 2017-2021.

In the AI, the percent of IFQ/CDQ sablefish catch taken by pot gear was:

- 46% from 2003-2009,
- 9% from 2010-2016, and
- 63% from 2017-2021.

Sablefish pot fishing (with legal retention of halibut) in the GOA IFQ fishery has been allowed under regulations since 2017 (81 FR 95435, January 27, 2017). The increases in pot fishing in the GOA since 2017 have been similarly dramatic to the BSAI, though there are differences among management areas. Table 4-6 shows the increase in harvest of IFQ sablefish in pot gear in the GOA subareas, particularly in

[16] In this analysis, the term "target" is used to indicate the species that the vessel is primarily attempting to harvest; gear may be designed or fished in a certain way (in terms of depth, location, and specifications) to better select for certain species.

2020 and 2021. By 2021, sablefish catch in pots in the WG and CG accounted for at least 90% of the catch. Much of the increase of pot fishing in both areas can be attributed to the development of lightweight, collapsible slinky pots that can be fished on both large and small vessels.

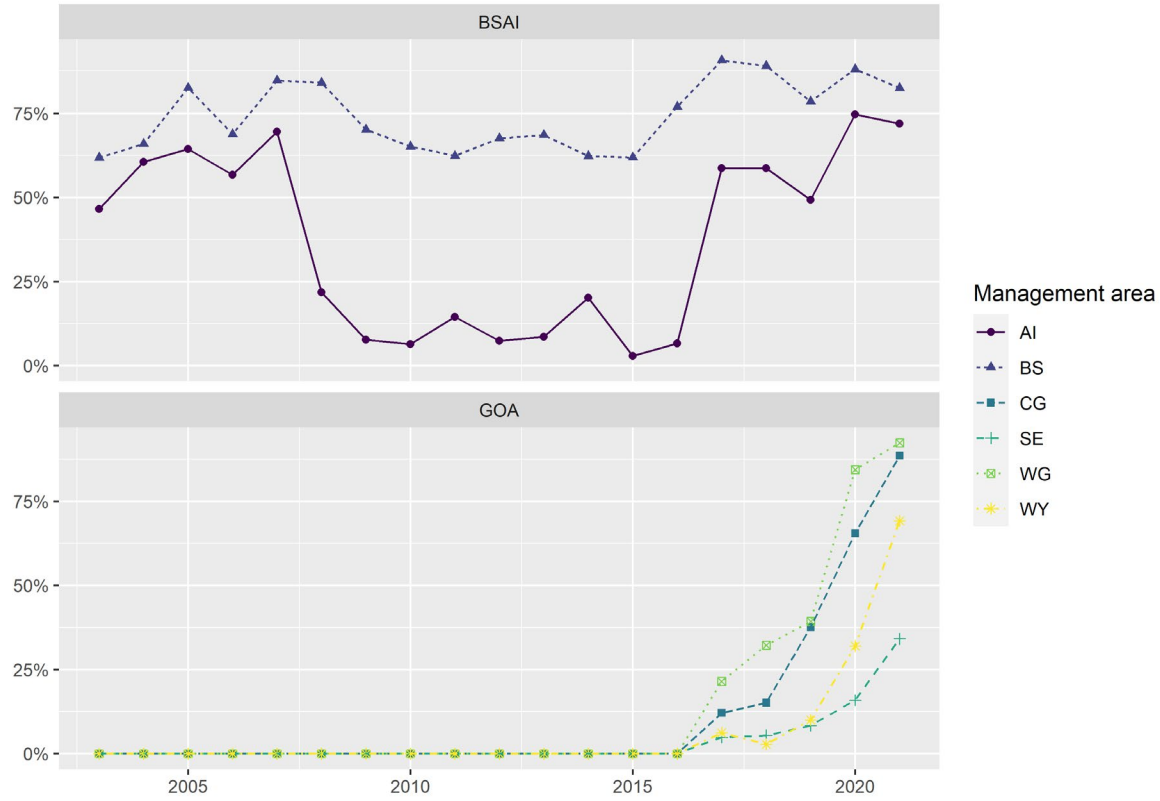


Figure 4-3 Percentage of IFQ/CDQ sablefish catch by pot gear by FMP and management area.
Source: AKRO/AKFIN (COUNCIL.COMPREHENSIVE_BLEND_CA accessed Jan 21, 2022)

Table 4-6 Percent of sablefish IFQ landed by pots versus HAL gear in each GOA subarea

Year	WG		CG		WY		SE	
	% Pot	% HAL	% Pot	% HAL	% Pot	% HAL	% Pot	% HAL
2017	22%	78%	12%	88%	7%	93%	5%	95%
2018	33%	67%	16%	84%	2%	98%	5%	95%
2019	37%	63%	31%	69%	9%	91%	8%	92%
2020	86%	14%	67%	33%	33%	67%	17%	83%
2021	93%	7%	90%	10%	71%	33%	35%	65%

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Along with sablefish landings in pot gear mentioned above, and not surprisingly, the number of vessels using pots to harvest sablefish IFQ in the GOA has also increased each year since the implementation of Amendment 101, from 22 in 2017 to 119 in 2021 (Table 3-1). The first three years after implementation did not see large increases in the number of vessels using pots to fish for sablefish IFQ, but in 2020, the number of vessels significantly increased. The CG has seen the highest level of participation in terms of number of vessels using pot gear to fish sablefish IFQ. In 2021, 98 vessels fished sablefish with pots in the CG (Table 4-7). Despite the increase in the number of pot vessels participating in the sablefish fishery, the overall number of vessels harvesting sablefish IFQ in the GOA (HAL and pot vessels combined) has continued to decline in recent years, from 274 vessels in 2014 to 242 vessels in 2021 (Figure 4-4). This overall decline in vessels follows the trends in participation demonstrated in the IFQ

Program Review on the number of new entrants over the last 20 years of the IFQ Program, which substantiates claims of decreasing entry in the halibut and sablefish IFQ fisheries (NPFMC/NMFS 2016).

Table 4-7 Vessels that harvested sablefish IFQ by GOA subarea and gear type

Year	WG		CG		WY		SE	
	Pot	HAL	Pot	HAL	Pot	HAL	Pot	HAL
2014		59		168		103		183
2015		54		161		99		178
2016		61		156		103		177
2017	6	54	18	144	10	96	10	166
2018	11	50	17	136	9	89	12	169
2019	14	39	24	119	14	82	14	159
2020	27	24	72	86	39	68	44	143
2021	38	13	98	73	63	56	83	123

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA
Note: Includes vessels that fished multiple areas or both gear types (vessels are double counted if they fished in more than one area or used both gears).

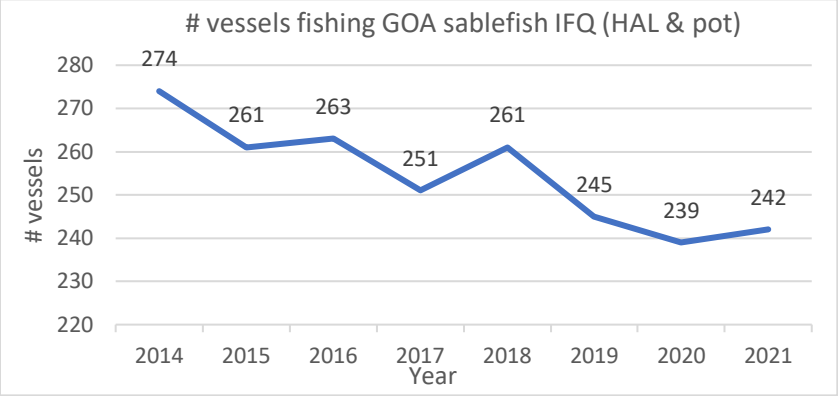


Figure 4-4 Distinct count of vessels fishing sablefish IFQ in the GOA
Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

According to data from the Catch Accounting System (CAS), which is a blend of CFEC/ADF&G Fish Ticket and Observer Program data, many vessels that fished GOA sablefish with pots during the 2017-2021 period had previously fished GOA sablefish IFQ during the few years prior to the authorization of pot gear for sablefish IFQ in the GOA (2014-2016). However, fifty vessels that fished sablefish IFQ with pots in 2017-2021 had not participated in the GOA sablefish IFQ fishery from 2014-2016, indicating that a portion of vessels had not been participating in the GOA sablefish IFQ fishery directly prior to implementation of pot gear. The analysts refer to these as "new" vessels, though these vessels may have participated in the IFQ fisheries prior to 2014. Most of these vessels appeared in the data in 2020 and 2021, not during the 2017-2019 period. Thirty-one vessels "new" vessels were using HAL gear in the same time period, indicating that the change in the number of "new" vessels may be attributed to factors other than opportunity to use a new gear type.

Figure 4-5 illustrates the distribution of vessel sizes used to harvest sablefish IFQ in the GOA HAL fishery (years 2014-2021) and the GOA pot fishery (2017-2021). Size classes are delineated at 40 feet, 50 feet, and 60 feet length overall (LOA). Fifty-one percent of HAL vessels that fished sablefish IFQ prior to Amendment 101 (during the 2014-2016 period) were in the 50-60-foot LOA range. From 2014-2016,

vessels smaller than 40 ft LOA constituted about 7% of all vessels in the GOA sablefish IFQ fishery. No vessels under 40 feet LOA fished GOA sablefish IFQ with pots until 2020, when two of these smaller class vessels began using pot gear, increasing to seven vessels in 2021. According to CAS data, the smallest vessel that landed GOA sablefish IFQ using pots was 28 ft LOA. As of 2021, three catcher/processors (CP) used pots to fish sablefish IFQ in the GOA. The largest proportion of sablefish IFQ vessels still falls within the 50-60 feet LOA range, as it did prior to the authorization of pot gear for sablefish IFQ in the GOA.

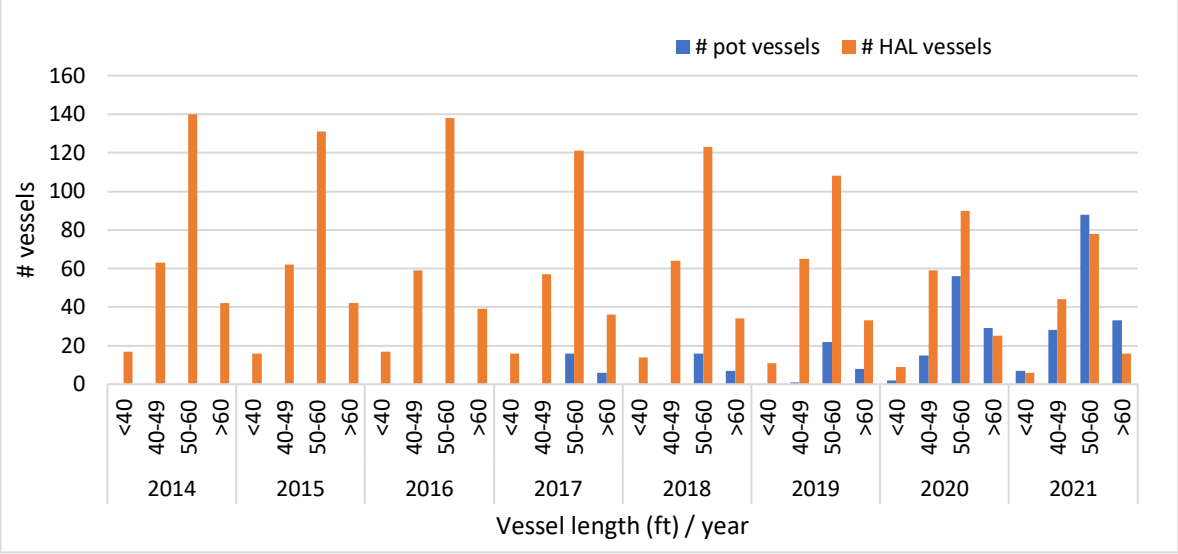


Figure 4-5 Sablefish IFQ vessel lengths (ft) by gear type, 2014-2021
Source: NMFS AKR CAS, data compiled by AKFIN in Comprehensive_BLEND_CA
Note: vessels are counted in both gear types (double counted) if they used more than one gear type.

The development of slinky pots (Figure 4-6) has enabled harvesters with smaller boats to transition to pot gear without having to drastically alter their vessels. Table 4-8 shows that the adoption of pot gear by smaller vessels is not confined to a single GOA subarea, though there are fewer vessels under 50' LOA that harvest sablefish IFQ using pots in WY and WG as compared to the CG and SE. The number of vessels of less than 60' using pot gear increased for all areas in 2020 and again in 2021. A vessel of less than 40' participated for the first time in 2020 in the WG, CG, and SE, and several vessels under 40' participated in 2021 in all areas except WY.

Table 4-8 Number of vessels by length and gear type in each area

		<40		40-49		50-60		>60	
Area	YEAR	Pot	HAL	Pot	HAL	Pot	HAL	Pot	HAL
CG	2014		10		32		83		43
	2015		5		35		77		44
	2016		10		32		76		38
	2017		6		33	13	70	5	35
	2018		9		34	11	63	6	30
	2019		7	1	33	17	50	6	29
	2020	1	4	11	31	35	28	25	23
	2021	3	4	17	29	49	27	29	13
SE	2014		10		45		105		23
	2015		10		44		100		24
	2016		10		41		101		25
	2017		9		40	9	96	1	21
	2018		9		42	10	98	2	20
	2019		8	1	38	10	97	3	16
	2020	1	8	3	34	33	89	7	12
	2021	4	7	10	26	57	81	12	9
WG	2014		6		6		26		21
	2015		5		7		24		18
	2016		6		8		28		19
	2017		8		9	5	20	1	17
	2018		5		12	7	21	4	12
	2019		4		10	10	15	4	10
	2020	1	2	1	8	15	7	10	7
	2021	2		1	5	21	7	14	1
WY	2014				5		65		33
	2015		1		4		62		32
	2016				5		67		31
	2017				6	7	61	3	29
	2018		1		7	7	55	2	26
	2019		1	1	9	10	45	3	27
	2020			2	4	20	40	17	24
	2021			4	6	35	34	24	16

The GOA Sablefish Pots Review (NPFMC 2021) included descriptions and figures of some of the different pot gear designs (rectangular, trapezoidal, conical, collapsible/slinky, and stackable) that have been used in the sablefish pot fishery. Some fishery participants indicated that they could use all the same gear (line, hauler, anchors) that they normally would use while longlining and simply "snap on" this style of pot. This is a smaller initial investment in gear than what has historically been needed to convert a vessel to pot fishing. Slinky pots are collapsible and reduce the amount of space on deck required to store pots (Figure 4-7). These types of pots sell for roughly $100-$150.[17] NPFMC 2021 also described how the

[17] http://www.alaskafishradio.com/lightweight-collapsible-codcoil-black-cod-pots-can-barely-keep-up-with-demand/

lightweight nature of these pots (10-16lbs) could potentially reduce the severity of gear conflict and entanglements, which relate to Elements 5 and 6 in Section 4.7.5. Figure 4-8 shows a diagram of a slinky pot and its components, which will be referred to throughout the document.

Figure 4-6 Slinky pots of several different sizes. Source: Fish Tech Inc., social media, June 2020.

Figure 4-7 Space required on deck for 60 large, stackable black cod pots (left) and 650 collapsible pots (right). Source: Fish Tech Inc., social media, June 2020.

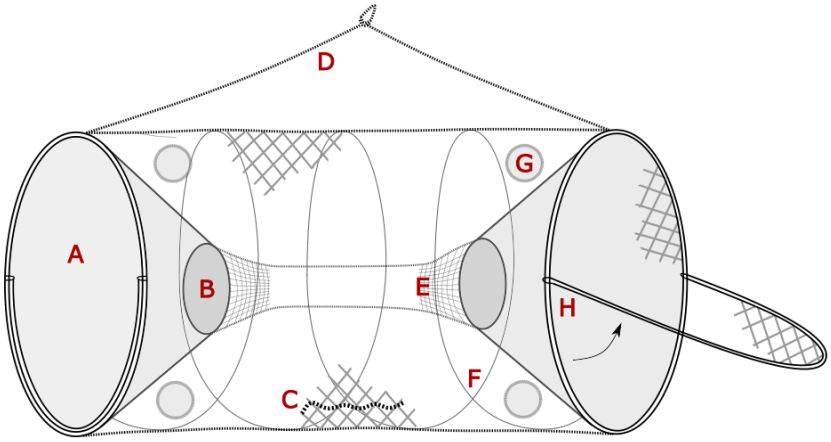


Figure 4-8 Diagram of a slinky pot and components. Courtesy of Jane Sullivan, AFSC.

A = pot end (composed of closed helical spring). B = tunnel opening / tunnel entrance (rigid/hard = stainless steel welded rings or rigid plastic, flexible/soft = pliable stainless steel chord coated with soft plastic, which allows the tunnel opening to elongate in one direction for halibut). C = bio twine/escape panel (aka "rotten cotton"). D = bridle. E = fine mesh tunnel entrance (aka "sock tunnel"). F = slinky/spring coil, which serves as the frame of the pot and also allows it to collapse. G = escape ring (note that there are four escape rings in this diagram). H = door hinge (note that there are doors on both pot ends).

4.5.3 CQE Program

This section highlights a brief history and the goals of the CQE Program, as well as the management measures most directly related to this action. For a comprehensive overview and more extensive data on the CQE Program, see the "Review of the Community Quota Entity (CQE) Program under the Halibut/Sablefish IFQ Program" (NPFMC, 2010).

The CQE Program was approved by the Council in 2002 and implemented by NMFS in 2004 under GOA Amendment 66 to the GOA FMP (69 FR 23681, April 30, 2004). This amendment revised the IFQ Program to allow a distinct set of remote, coastal communities with few economic alternatives to purchase and hold catcher vessel QS in Areas 2C, 3A, and 3B in order to help facilitate access to and sustain participation in the commercial halibut and sablefish fisheries. Eligibility to participate in the Program was limited to communities with fewer than 1,500 people, documented historical participation in the IFQ fisheries, direct access to saltwater on the Gulf of Alaska, and no road access to a larger community. Eligible communities can form non-profit corporations (CQEs) to purchase catcher vessel QS. The annual IFQ resulting from the QS can be transferred to eligible community residents.[18]

In the final motion establishing the CQE Program, the Council established three performance standards that, although not required by regulation, were intended to be seen as goals of the program with voluntary compliance monitored through the annual reporting mechanisms and evaluated when the program is reviewed. These are:

1. *Maximize benefit from use of community IFQ for crew members that are community residents.*
2. *Ensure that benefits are equitably distributed throughout the community.*
3. *Ensure that QS/IFQ allocated to an eligible community entity would not be held and unfished.*

[18] NMFS requires that criteria are developed for the equitable distribution of quota, but not that each community follow specified criteria. Some communities have employed a 'point system', while others have developed other types of rating criteria to distribute quota

The CQE Program was intended to promote ownership by individual residents in coastal communities, as individuals have the opportunity to lease annual IFQ from the CQE and may gradually become financially able to purchase their own QS. CQE-held QS must remain with the CQE unless it is sold in order to improve, sustain or expand the opportunities for community residents to participate in the IFQ fisheries or to meet legal requirements (50 CFR 679.41(g),[19] creating a permanent asset to be used for the benefit of the community and its residents. An eligible community resident (50 CFR 679.2), for the purposes of the IFQ Program, is a citizen of the United States and maintained a domicile in a rural community (the CQE community) for 12 consecutive months immediately preceding the time when the assertion of residency is made. It is important to note that the criteria for residency in the existing CQE Program do not appear to require that a person must have 'lived continuously' in the community for 12 months; rather, residency is based on having the principal home in the community, and the intent to return to that home (NPFMC, 2010). Both community- and individually-held QS are important in achieving the Council's objectives for the IFQ Program in terms of fishing access and socioeconomic wellbeing.

In 2014, BSAI Amendment 102 expanded the Program to also include one community in Area 4B, Adak. During development of this amendment, the Council considered comments from the public, NMFS, and the State of Alaska, and incorporated the foundation of the GOA CQE program in its recommendation for the Aleutian Islands CQE Program. As noted earlier, the GOA CQE Program was developed to provide harvest opportunities for small, remote, coastal communities that lacked access to fishery resources; the Aleutian Islands CQE Program was intended to meet that same purpose.

As of 2021, there were 46 CQE-eligible communities across the GOA and Aleutian Islands.[20] Adak is the only eligible CQE community in Area 4B. CQE participation has been limited, mainly because most CQEs have had difficulty financing the purchase of QS (NPFMC 2010). Only five CQEs have purchased QS.[21] However, 30 of the 46 eligible GOA communities have completed the process to form a CQE and have it approved by NMFS.

4.5.4 Adak Community Quota Entity

The CQE representing the Community of Adak, AK is the Adak Community Development Corporation (ACDC).[22] ACDC is the non-profit entity authorized to purchase and hold class B and C share QS for Adak to be transferred to residents. Table 4-9 displays the QS units and equivalent IFQ pounds held by ACDC.

[19] 50 CFR 679.41(g): A CQE may transfer QS: (i) To generate revenues to provide funds to meet administrative costs for managing the community QS holdings; (ii) To generate revenue to improve the ability of residents within the community to participate in the halibut and sablefish IFQ fisheries; (iii) To generate revenue to purchase QS to yield IFQ for use by community residents; (iv) To dissolve the CQE; or (v) As a result of a court order, operation of law, or as part of a security agreement. If the CQE sells its QS for any other reason, NMFS will withhold annual IFQ permits on any remaining QS held and will disqualify the CQE from holding QS on behalf of that community for three years. It also requires that the CQE divest itself of any remaining QS on behalf of that community.
[20] See Table 21 in 50 CFR 679.
[21] Adak (4B), Hoonah (2C), Perryville (3B), Old Harbor (3A), and Ouzinkie (3A) are the five CQE communities that have purchased QS as of August 2021.
[22] ACDC is a nonprofit corporation organized exclusively for charitable, scientific, and/or educational purposes within the meaning of Section 501(c)(3) of the Internal Revenue Code.

Table 4-9 Halibut and Sablefish QS and IFQ held by ACDC 2014 to 2021

	Halibut		Sablefish		# vessels
Year	QS held (units)	IFQ Held (pounds)	QS held (units)	IFQ Held (pounds)	
2014	615956	60502	102230	7665	3
2015	615956	60502	102230	7630	3
2016	678609	66656	102230	6592	3
2017	678609	66656	221544	15922	3
2018	678609	61395	720570	59349	3
2019	1196304	124723	720570	59946	2
2020	1196304	113384	720570	60841	3
2021	1196304	126784	720570	140786	1

Source: NMFS Restricted Access Management (RAM) division IFQ landings database sourced through AKFIN.

Note: Shows QS/IFQ held at the beginning of each year, does not include further QS purchased in 2021. Number of vessels indicates vessels that harvested CQE-held IFQ. From annual CQE Reports.

In February 2010, ACDC presented a proposal to the Council to develop a CQE Program in Area 4B. In the original proposal, ACDC did not include the requirement that CQE-held QS can only be leased to individuals who have been residents of the community for the previous 12 months - a significant departure from the GOA CQE Program. The ACDC proposal instead included a requirement that halibut and sablefish resulting from CQE-held QS be delivered 'in the region.' ACDC noted that the community would benefit from both residents fishing the CQE-held QS and product delivered to the plant located in Adak, however, ACDC also wanted the flexibility to lease QS to non-residents should resident fishermen not be available. The proposal also noted that allowing Adak to become a CQE would allow both residents and non-residents who participate in the BSAI small boat Pacific cod fishery and deliver to Adak to lease halibut and sablefish IFQ, which could address halibut bycatch issues in that fishery.

During discussion at the December 2010 meeting, the Council concluded that the 12-month residency requirement is a fundamental element of the CQE Program to keep residents tied to the community. The definition of resident – an individual that has maintained a domicile in a rural community for 12 consecutive months immediately preceding the time when the assertion or residency is made – does not necessarily mean that the individual must have been physically located in that community for 12 months, which provides additional flexibility to individuals wishing to lease CQE held QS. In their final motion in February 2012, the Council included in the preferred alternative that the Area 4B CQE must adhere to the residency requirement **but included a 5-year exemption period with an effective date of March 17, 2014, ending March 17 2019 (79 FR 8870, February 14, 2014). After the 5-year period, the CQE is required to lease the annual IFQ derived from QS it holds only to an eligible community resident of Adak.** [23]

The intent of the residency requirement is to tie the potential long-term benefits of QS held by an Aleutian Island CQE to the residents of Adak, however, the additional flexibility was allowed because the number of Adak residents that had landed catch in Adak in the past was minimal, and it provided time for the establishment of the CQE to attract individuals back to the community.

[23] 50 CFR 679.41(g)(6)(ii) In the Aleutian Islands subarea may be used by any person who has received an approved Application for Eligibility as described in paragraph (d) of this section prior to March 17, 2019 and only by an eligible community resident of Adak, AK, after March 17, 2019.

During the five years proceeding Amendment 102, ACDC prioritized the leasing of community-held quota to residents through their quota distribution criteria (described further in paragraphs below). The flexibility to lease to non-residents had been provided with the rationale that over the five years, the Adak CQE would attract individuals to establish residency in the community in order to become eligible to lease QS. However, Adak has continued to experience a decline in population (Table 4-15), and in turn, eligible community residents. According to CQE annual reports, a large amount of the CQE QS held by ACDC went unleased and/or unharvested in 2019, 2020, and 2021 (ACDC 2019; ACDC 2020; ACDC 2021), and the closure of the processing plant in Adak has further hampered the community's ability to develop a healthy fishing economy.

History of Adak

Adak is located on Kuluk Bay on Adak Island in the Aleutian chain. It is the southernmost community in Alaska. It lies 350 miles west of Unalaska in the Aleutian Island chain and is not a CDQ community. The Aleut peoples have a long history on and around Adak and other communities in the Aleutian Islands prior to World War II. Adak had a significant role during World War II as a U.S. military operations base, and army installations on the island allowed U.S. forces to mount a successful offensive against the Japanese-held islands of Kiska and Attu.[24] After World War II, Adak was developed as a Naval Air Station, playing an important role during the Cold War as a submarine surveillance center. The station officially closed on March 31, 1997, and the Aleut Corporation acquired a significant portion of Adak Island, along with the naval facilities, under the BRAC (base realignment and closure) and other Federal land transfer processes. This was a complicated and multi-step process that resulted ultimately in a land exchange between the Aleut Corporation and the USFWS. A significant portion of land on the southeastern edge of the former military-controlled land was retained as Federal land, due to its high wildlife value and location (connection to other USFWS-owned land).

ACDC Investment in Adak

Since the military station closed, both the Aleut Corporation and ACDC have invested significant effort into developing Adak as a commercial center and civilian community with a private sector economy focused heavily on commercial fishing (NPFMC 2014). Pursuant to its status as a 504(c)(4) non-profit, funds collected by ACDC must be *dedicated to the promotion and development of fisheries related resources, infrastructure, and assets for the benefits of the community of Adak, Alaska* (NPFMC 2014). Adak has pursued a broad range of fisheries for a resident fleet to be able to deliver to the shoreside processor located in Adak. The Aleut Corporation and its subsidiaries own much of the infrastructure in the community, including the building that houses seafood processing operations, and are otherwise directly involved in fishery issues as the recipient of a directed fishery allocation of AI pollock to support the economic development of the community of Adak. There have been ongoing rumors for the last few years that the military may return to Adak and in March of 2021, Thomas Mack (president and CEO of the Aleut Corporation) and U.S. Senator Dan Sullivan stated once again that the Navy could be considering reopening the base as a part of its new Arctic strategy.[25]

Through Congressional action, Adak currently receives an exclusive community allocation of 10% of the Western AI golden king crab TAC, which is allocated to ACDC. In addition, fifty percent of the class A golden king crab IFQ (i.e. IFQ that must be delivered to a processor with matching IPQ) for the Western Aleutian Islands fishery must be delivered to a shorebased or stationary floating crab processor west of 174 degrees west. Only two communities, Adak and Atka, are located within this geographic area. To address the lack of processing capacity that occurred due to changes in plant ownership and financial

[24] Alaska DCCED, Community Database Community Information Summaries, 2010. http://www.commerce.state.ak.us/dca/commdb/CIS.cfm
[25] https://www.webcenterfairbanks.com/2021/03/16/sullivan-navy-considering-reopening-base-in-adak/

difficulties (Section 4.5.4.2), an emergency action created an exemption to the regional landing requirement allowing for landings from the 2009-2010 and 2010-2011 season to be landed outside of the western region. In 2011, Crab FMP Amendment 37 allowed future exemptions to the regional landing requirement, but only with the consent of both the communities of Adak and Atka (76 FR 35781, June 20, 2011). Finally, Adak also receives an allocation of the AI pollock fishery, which is allocated directly to the Aleut Corporation.

During the first five years of the program, when the exemption of the residency requirement was in place, ACDC prioritized residents when distributing quota through a point system. Points were allocated to individuals if they were residents of Adak,[26] owned, operated, or crewed on a local vessel, hired crew who qualified as residents, made landings in the directed state cod fishery within the last 12 months, and/or were Adak resident applicants who did not currently possess IFQ for the AI Area (ACDC, 2011).

After 2018, Adak did away with the point system but has since implemented a process to ensure equitable and fair distribution to crewmembers and vessels. Once the Net Quota for Distribution is determined after committed obligations or legal deductions are made and the number of eligible applicants for the program is established, the Net Quota for Distribution is split between a Vessel Pool and Crewmembers Pool. The Vessel Pool is set at no less than 50% and no more than 80% of the Net Quota for Distribution amount and the Crewmembers Pool is set at no less than 20% and no more than 50%. Percentages are set on an annual basis. The Vessels Pool quota is made available to the vessels pool on a stacked allocation basis: (1) all applicants are allocated an amount based on the lowest request or common denominator of all eligible pool applicants and then (2) the remaining applicants are allocated an amount based on the lowest common denominator of the remaining eligible pool applicants in a round-robin fashion until the pool is fully distributed. The Crewmembers Pool quota is divided equally amongst eligible applicants (ACDC, 2021).

4.5.4.1 Adak Quota Recipients and Harvesting Vessels

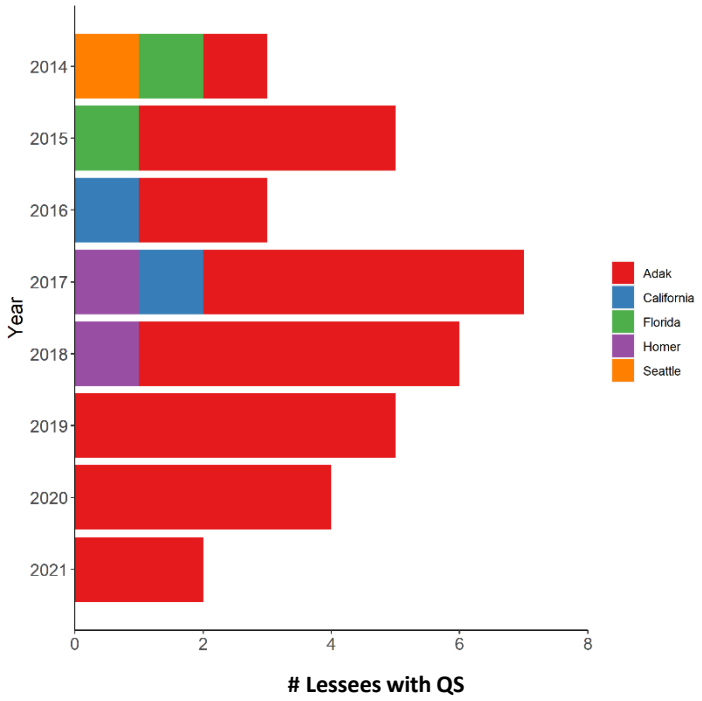
As mentioned above, during the first five years of the program, priority was still given to individuals who could prove residency (Section 4.5.4). Table 4-10 shows the place of residency for individuals who have received halibut and/or sablefish quota from the CQE. In all years except 2014, Adak residents represented the majority of the recipients. For all but the first year, residents of Adak were the recipients of more than half of the halibut quota and all of the sablefish quota leased (Table 4-11; Table 4-12). The non-residents who leased quota were a combination of captains and crewmen who had previously delivered to the Adak processing plant.[27]

Adak has historically pursued a broad range of fisheries for a resident fleet to be able to deliver to Adak Fisheries, the shoreside processor that had been located on Adak. The development of a local residential fleet has been a goal of the local leadership, but currently the locally-owned catcher vessel fleet is small. From 2016-2019, three vessels fished CQE-held IFQ, one of which was had an owner address in Adak.[28] In addition, the fleet is limited in their fishing opportunities in the AI subarea, due to the size and range of the vessels. As a relatively new civilian community with no historical local fleet, Adak does not have a large established residential fishing fleet. Local vessels, including small vessels, are desired by the community for a number of reasons. Larger vessels from outside the community tend to be self-supplied and may work the area without coming into the community. Small, locally based vessels, on the other hand, buy local groceries, utilize local goods and services, have crew who live in the community, and otherwise are seen as generally contributing to a developing local economy. Table 4-13 shows the homeports for vessels that have harvested IFQ derived from the Adak-CQE. During the first five years of

[26] During the interim period, a *resident* was defined as someone who resided in Adak for three consecutive months. Since the end of the residency exemption period, Adak has implemented the 12-month residency requirement when leasing quota.
[27] Nelson, personal correspondence 6/17/2021.
[28] ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive FT

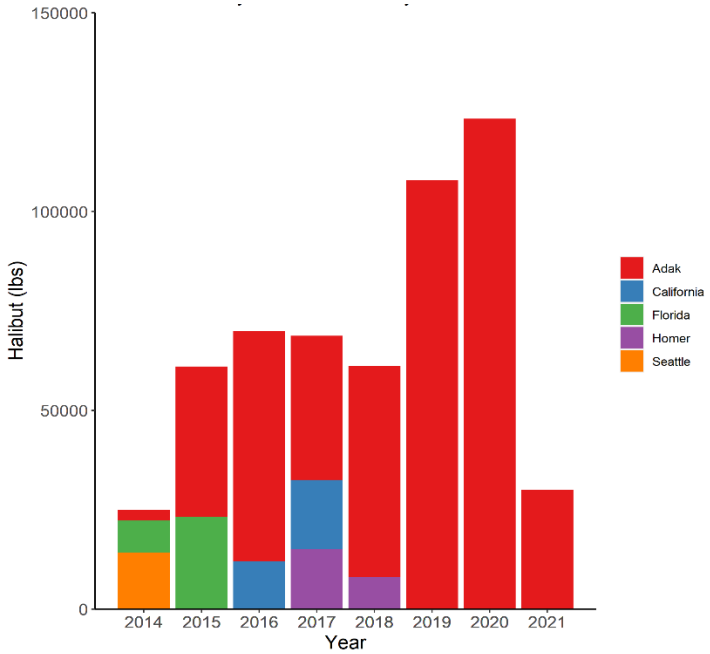
the program, when the exemption to the residency requirement was in place, priority was given to applicants who owned, operated, or crewed on a local vessel with fixed-gear capabilities. One Adak-based vessel has participated every year since 2015, and another Adak-based vessel participated in five out of seven years (2015-2019).

Table 4-10 Lessee Place of Residency



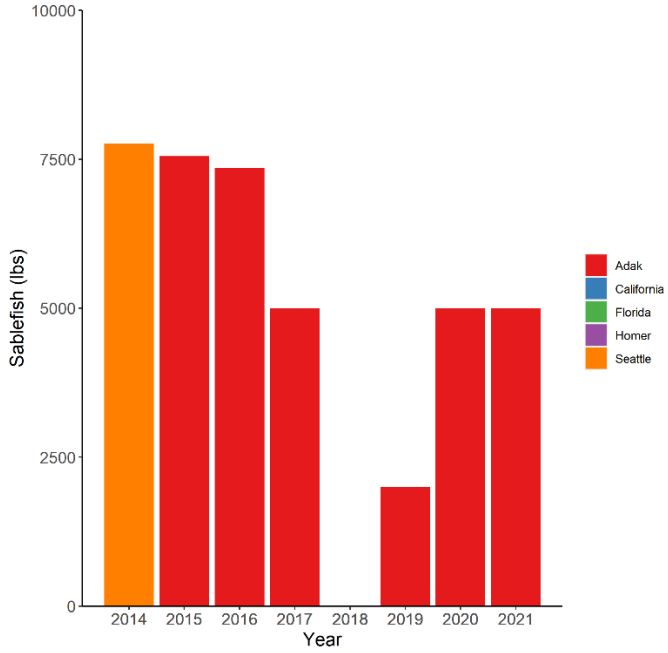
Source: ACDC CQE Annual Reports 2014-2021; Adak-Quota-Recipients.xlsx

Table 4-11 Halibut IFQ Leased by Place of Residency



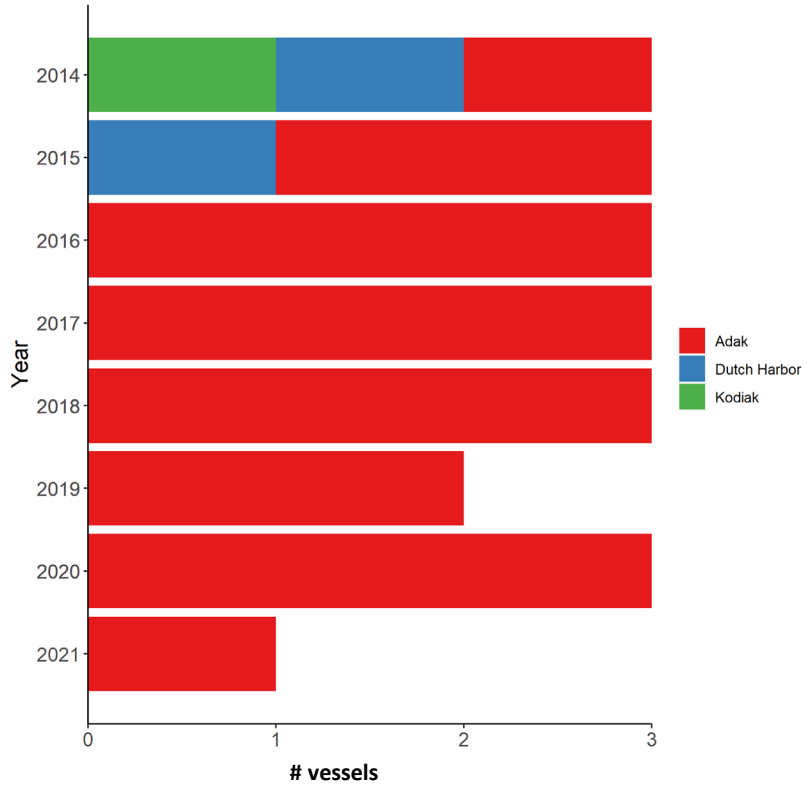
Source: ACDC CQE Annual Reports 2014-2021; Adak-Quota-Recipients.xlsx

Table 4-12 Sablefish IFQ Leased by Place of Residency



Source: ACDC CQE Annual Reports 2014-2021; Adak-Quota-Recipients.xlsx

Table 4-13 Harvesting Vessel Homeports



Source: ACDC CQE Annual Reports 2014-2021; Adak-IFQ-VesselData.xlsx

4.5.4.2 Adak Processors

The shorebased processor in Adak has struggled with maintaining stable operations and ownership. It was closed in 2010 and 2020 and had conducted only a small amount of processing in 2011 (NPFMC 2013). NPFMC 2013 indicates that in the years when the processor was open, most commercial fishing deliveries to Adak were from larger vessels from outside the area. Of the species processed, Pacific cod, halibut, and sablefish were the primary species. The community also saw some crab and Pacific cod processing related to other companies, but these companies are not physically located in the community. From 2003 to 2009, the Adak processing plant was most active from January through March followed by a relatively quiet period from April through June, and then running about half-speed from July through September before activity tapering off from October into November. The A-season Pacific cod fishery was the main source of income for the plant (and raw fish tax revenue for the City of Adak), accounting for about 75% of the plant revenue (NPFMC 2013). The plant has the capability to process one million round pounds (454 mt.) of Pacific cod daily.[29]

One of the difficulties of the Adak shoreplant has been the numerous ownership changes since its establishment in 1999 as Adak Seafoods. The physical structures that have housed shore-based processing operations in Adak in the post-military installation era are owned by the Aleut Corporation and/or its subsidiaries (NPFMC 2021b). In mid-July 2000, Norquest became a predominant partner. In January 2002, Icicle Seafoods became a relatively equal partner in the operation, which operated as Adak Fisheries, LLC. Other ownership changes ensued, although until recently, the company still operated as Adak Fisheries, LLC. In 2009, the price of Pacific cod dropped to less than half of the 2008 price. As a result, Adak Fisheries, LLC. struggled to meet its financial obligations, and in the end, filed for Chapter 11 bankruptcy in September 2009. During 2010 and 2011 fishing years, financial difficulties surrounding the Adak shoreplant resulted in no processing of Pacific cod. In 2012, the shoreplant was once again open for business operated by Icicle Seafoods Inc., processing a large portion of Area 541/542 Pacific cod. In April 2013, Icicle Seafoods closed its operation in Adak citing concerns about the health of the region's Pacific cod resource and increased regulatory uncertainty surrounding AI Pacific cod. In June 2013, the City of Adak was the highest bidder in an auction for the processing equipment formerly owned by Adak Seafood, LLC. The intent of the purchase by the city was to keep the processing equipment in place as a turnkey operation in order to facilitate the expedited reopening of the plant. The processing facility was operated in 2014 by Adak Cod Cooperative LLC and from 2018-2019 by Golden Harvest Alaska Seafoods LLC.[30] Currently, Aleut Corp. owns the fish processing plant in Adak through Peter Pan Seafood Co.

In December 2021, the Council took final action on the BSAI Pacific cod trawl CV cooperative program.[31] The preferred alternative, with the selection of Option 6.1, would require the cooperative(s) to reserve a set-aside for delivery to an Aleutian Islands shoreplant in any year when the community of Adak and/or Atka files a notice of intent to process. The amount of the set-aside will be 12% of the BSAI CV trawl directed A season harvest amount and is in effect during the A and B seasons. Impacts of that action as it relates to the community of Adak and its processing sector are included in NPFMC 2021b.

There is only one other shoreplant in the AI management area,[32] located in Atka. Of these two plants, Adak is the primary plant for Pacific cod. Since 2008, except for 2018 and 2019, AI fishing communities, and specifically the community of Adak and its shoreplant, have seen a decrease in the amount of Pacific

[29] Dave Fraser, Adak Community Development Corporation, July 2013, as cited in NPFMC 2013.
[30] In June 2020, Golden Harvest Alaska Seafoods LLC stopped purchasing fish and sent employees home. https://www.adn.com/opinions/2020/09/02/adak-this-is-how-alaska-fishing-communities-die/
[31] June 2021 Council motion at https://meetings.npfmc.org/CommentReview/DownloadFile?p=73227733-ff8f-4d8c-9d77-4a0360420541.pdf&fileName=C4%20Council%20Motion.pdf
[32] In addition to the one shore-based processor operating in Adak, there have historically been floating processors (SFPs) operating in and around Adak.

cod being delivered to their plant from the Federal component of the fishery. The amount of Pacific cod delivered to AI shoreplants has been highly variable, which is not conducive to stable shoreside operations. Several factors have contributed to this instability, include decreased Pacific cod biomass in the AI subarea; the establishment of separate OFLs, ABCs, and TACs for Pacific cod in the BS and the AI; changing Steller sea lion protection measures; and changing fishing practices in part resulting from rationalization programs that allocate catch to specific fishery participants (NPFMC 2021b).

4.5.4.3 Adak Community and Employment Information

Adak is a relatively diverse community with a shore-based processor and is still transitioning from its days as a relatively large military base in the 1990s to a small civilian Alaskan community. In the years immediately following the departure of the military there was still military-affiliated businesses and industries located in Adak but over time these have gradually all left the community as services became no longer needed (NPFMC 2020). Since becoming the site of shore-based processing operations, Adak has historically had a substantial proportion of its population living in group quarters, and the percentage of minority residents has been much higher than the percentage of Alaska Native residents alone (Table 4-14). One specific demographic challenge faced by Adak has been retaining a large enough number of families with children to qualify for state funding of a school in the community (which requires a minimum of 10 students). The loss of any families with school age children from the community raises concerns about the ability to keep the school open which, were they to close, would make retention of other families with school age children in the community more difficult. Following the closure of the Adak processing plant in 2020, a family with four school age children left the community,[33] moving the number of potential school enrollees closer to the minimum required for state funding.

Table 4-14 Adak Community Census Data

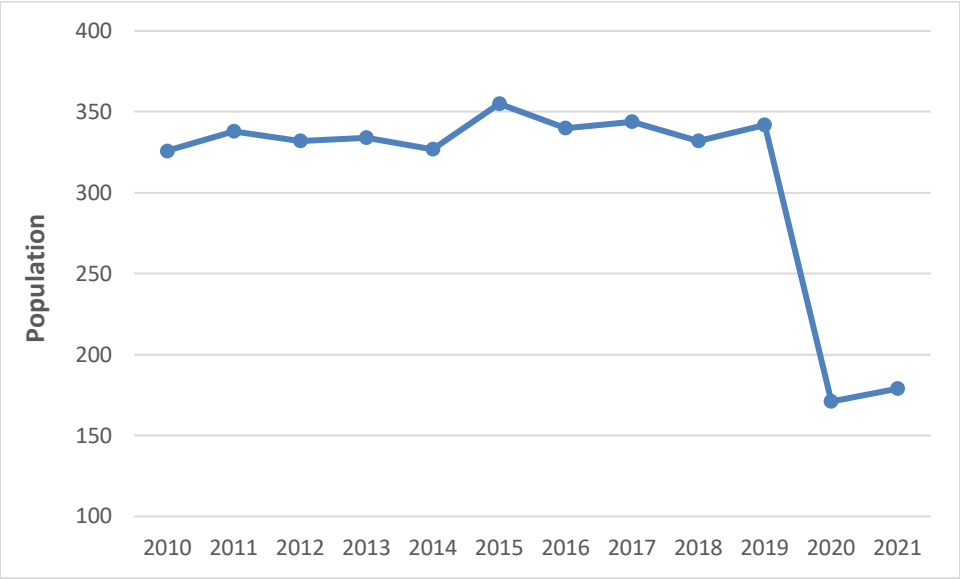
Community	2010 Decennial Census Data				2019 American Community Survey Data				
	Total Population	Alaska Native/ Native American Residents (percent of total population)	Minority* Residents (percent of total population)	Residents Living in Group Quarters** (percent of total population)	Per Capita Income (dollars)	Median Household Income (dollars)	Number of Family Households	Median Family Income (dollars	Low-Income*** Residents (percent of total population)
Adak	326	5.5%	81.9%	66.6%	$35,193	$70,000	25	$68,750	16.4%
State of Alaska	626,932	14.1%	37.1%	1.8%	$36,787	$77,640	166,325	$92,588	10.7%

*Defined as all persons other than those self-identified being in both “white” and “non-Hispanic” census categories.
**Defined as “other non-institutional facilitates,” which excludes institutionalized populations, college/university student house, and military quarters.
***Defined as those persons living below the poverty threshold by the U.S. Census Bureau in the 2014-2018 American Community Survey. As a point of reference, a family of four (two adults and two children) had a poverty threshold of $25,926 in 2019.
Source: US Census 2010; US Census 2020. Table 2-72 from NPFMC 2021b.

Table 4-15 shows the population estimates for Adak from 2010-2021. There has been a declining trend in the population since 2011, which coincides with the closure of the processing plant in 2010 and 2011.

[33] personal communication, S. Minor, 8/6/2020

Table 4-15 Adak Population



Source: AK-Populations.xlsx downloaded from https://live.laborstats.alaska.gov/pop/index.cfm January 27, 2022.
Note: 2010 and 2020 data are from census, others are estimates.

The community of Adak has acted as a port of embarkation and disembarkation for CPs and CVs, immediately before and immediately after trips targeting Pacific cod in the AI subarea, as well as AI Atka mackerel and/or AI pollock. As a port of embarkation and disembarkation, Adak receives a substantial amount of economic activity involving a range of goods and services present in the small community. In general, vessels during a port call could conduct crew transfers, purchase provisions and fuel, offload product, and purchase other local goods and services. Money spent on goods and services by vessels making port calls does circulate in the small economy of Adak. It is expected that in years when the processor is closed, less economic activity occurs as a result of fewer port calls.

Comprehensive data on employment in a small coastal community such as Adak is difficult to collect and report on. The most recent census data indicate that the top five occupations in Adak are: transportation and warehousing, construction, public administration, manufacturing, and retail trade.[34] It is likely that many residents work multiple part-time jobs. While data are limited, it is expected that with no other shore-based processor in the community, Pacific cod processing activity at the Adak shoreplant likely accounts for a large proportion of local employment in Adak.

4.5.4.4 ACDC Payments and Adak Fishery-Derived Tax Revenue

Individuals who lease IFQ derived from ACDC-held QS must pay a royalty based on a percent of the ex-vessel sale of fish delivered against the CQE IFQ. The royalty payment is calculated on the ex-vessel price net of taxes. The royalty rate is set by the ACDC Board of Directors on an annual basis (2020 ACDC Application). Figure 4-9 shows the payments made to the CQE for use of IFQ. Sablefish payments were only made by residents from 2015-2020, and only by a single non-resident in 2014. Non-resident halibut payments comprised of a substantial amount of the payments made to ACDC in three of the five years when the residency exemption was in place. Halibut and sablefish payments made in 2019 and 2020 were dramatically lower than in the previous five years, even though the lease rates were not. This is due

[34] In the civilian employed population 16 and over. Source: 2020 Census Data

to several individuals who leased quota not going fishing due to difficulty finding a vessel and the impacts of the COVID-19 pandemic.[35]

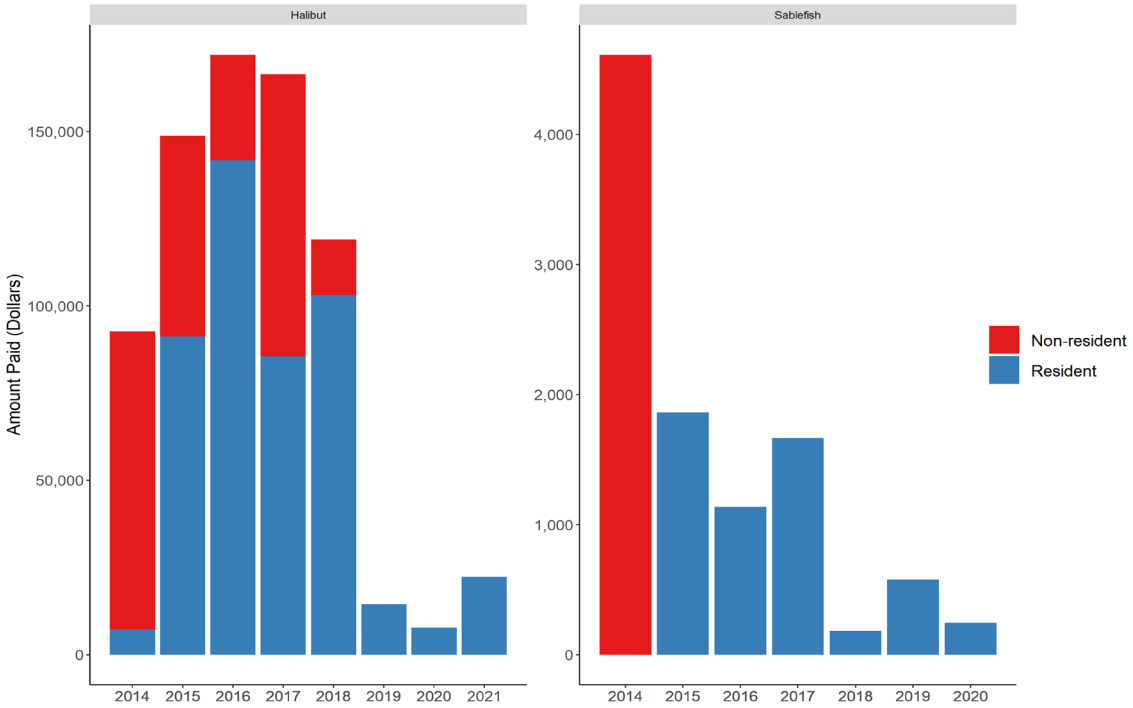


Figure 4-9 Payments made to ACDC
Source: ACDC CQE Annual Reports 2014-2021; ACDC_IFQ_Payments.xlsx

Table 4-16 City of Adak selected fisheries-related general fund revenues, fiscal years 2010-2019.

	Revenue (dollars) by Direct Fishery Revenue Source							
	Direct Fishery Revenue Source							
Fiscal Year	City Raw Seafood Tax	State Fisheries Business Tax from DOR	State Fisheries Resource Landing Tax from DOR	State Fisheries Business Tax from DCCED	State Fisheries Resource Landing Tax from DCCED	Direct Fishery Revenue Source Total	All General Fund Revenue	Direct Fishery Revenue Source Total as a Percent of All General Fund Revenue
FY 2010	na	$311,439	$97,736	$308,178	$0	$717,353	$1,464,483	49.0%
FY 2011	na	$13,567	$54,949	$98,973	$92,919	$260,408	$1,015,485	25.6%
FY 2012	na	$143,848	$40,219	$122,743	$165,964	$472,774	$1,916,341	24.7%
FY 2013	$108,094	$75,469	$61,035	$145,816	$115,360	$505,774	$1,507,930	33.5%
FY 2014	$140,193	$168,370	$86,452	$139,135	$111,999	$646,149	$1,410,574	45.8%
FY 2015	$65,349	$122,489	$54,660	$108,405	$40,443	$391,346	$1,310,497	29.9%
FY 2016	$76,313	$67,968	$1,683	$110,149	$14,351	$270,465	$1,084,898	24.9%
FY 2017	$108,602	$44,636	$103,209	$82,413	$158,858	$497,718	$1,208,202	41.2%
FY 2018	$290,839	$34,908	$74,247	$121,121	$79,832	$600,947	$1,549,197	38.8%
FY 2019	$330,883	$34,131	$161,256	$73,844	$121,952	$722,066	$1,478,153	48.8%

Source: City of Adak, Alaska. Annual Consolidated Financial Statements Fiscal Years 2010-2019.
http://www.commerce.alaska.gov/dcra/dcrarepoext/Pages/FinancialDocumentsLibrary.aspx

Table 4-16 provides information on City of Adak tax revenues deriving from direct fishery revenue sources (the city raw seafood tax, the state shared fisheries business tax, and the state shared fisheries resource landing tax) compared to all general fund revenues received by the city for fiscal years 2010-

[35] Personal communication,

2019. As shown, for the City of Adak, between roughly 25 percent and 49 percent of all general fund revenues in any given year derive from direct fishery revenue sources.

4.5.4.5 IFQ Regulatory Exceptions for Adak

The Council has recommended and NMFS has implemented numerous regulatory exemptions or exception applicable to the participation of the community of Adak, AK in the federally-managed fisheries off Alaska. This section summarizes the regulatory exceptions under the IFQ Program that are applicable to the CQE representing the community of Adak, AK.

TEC exemption: Regulations at 50 CFR 679.41(d)(6) specifically exempt residents of Adak, Alaska from the requirement to have 150 days of work experience as a crewmember in order to be eligible to receive IFQ by transfer.[36] This allows the CQE representing the community of Adak, AK to transfer IFQ to any eligible resident of the community regardless of their work experience as a crewmember.

Residency exemption: Until March 17, 2019, IFQ derived from QS held by a CQE on behalf of the community of Adak in the Aleutian Islands subarea could be used by any person who has received an approved Application for Eligibility as described in paragraph § 679.41(d) and only by an eligible community resident of Adak, AK, after March 17, 2019.[37]

Sablefish Use Cap: The CQE representing the community of Adak, AK may hold up to 4,789,874 units of sablefish QS. This is higher than the limit of 3,229,721 units of sablefish QS that may be held by any other CQE entity.[38]

Halibut Use Cap: The CQE representing the community of Adak, AK may receive an amount of halibut QS up to 1,392,716 units of halibut QS.[39] No person other than a CQE representing the community of Adak, AK, individually or collectively, or an RQE, may use more than 495,044 units of halibut QS in IFQ Area 4B unless the amount in excess was received as an initial allocation of halibut QS.[40]

Fish-up: IFQ derived from QS held by a CQE may be used to harvest IFQ species from a vessel of any length, with the exception of IFQ derived from QS in IFQ regulatory areas 3A and 4B that are assigned to vessel category D.[41] Class B or C IFQ held by a CQE in area 4B may be fished on a vessel of any size class. As of 2021, the CQE representing the community of Adak, AK does not hold any D class QS.

Halibut Vessel Limits: Vessel caps are specified for IFQ leased from a CQE: "No vessel may be used, during any fishing year, to harvest more than 50,000 lbs (22.7 mt) of IFQ halibut derived from QS held by a CQE".[42] In 2020, the Council recommended and NMFS implemented, emergency regulatory action to provide flexibility to IFQ program participants by removing the halibut vessel use caps in IFQ Areas 4B, 4C, and 4D (85 FR 41197, July 9, 2020) and made the a similar recommendation to remove the halibut vessel use caps in IFQ Areas 4A, 4B, 4C, and 4D in 2021 (86 FR 19207). CQEs are not allowed to hold halibut QS in areas 4A, 4C, 4D and 4E 50 CFR §679.42(f)(3) therefore ACDC is the only CQE that would be affected by this action if approved and implemented by NMFS.

[36] 50 CFR 679.41(d)(6): https://ecfr.federalregister.gov/current/title-50/chapter-VI/part-679#p-679.41(d)(6)
[37] 50 CFR 679.41(g)(6)(i) and 679.42(e)(8)(ii) and 50 CFR 679.42(f)(7)(ii): https://ecfr.federalregister.gov/current/title-50/chapter-VI/part-679/subpart-D/section-679.41#p-679.41(g)(6)(i)
[38] 50 CFR 679.42(e): https://ecfr.federalregister.gov/current/title-50/chapter-VI/part-679/subpart-D/section-679.42#p-679.42(e)
[39] 50 CFR 679.42(f)(2): https://ecfr.federalregister.gov/current/title-50/chapter-VI/part-679/subpart-D/section-679.42#p-679.42(f)(2)
[40] 50 CFR 679.42(f)(1): https://ecfr.federalregister.gov/current/title-50/chapter-VI/part-679/subpart-D/section-679.42#p-679.42(f)(1)
[41] 50 CFR 679.42(a)(2)(ii): https://ecfr.federalregister.gov/current/title-50/chapter-VI/part-679/subpart-D/section-679.42#p-679.42(f)(2)(ii)
[42] 50 CFR 679.42(h)(1)(ii): https://ecfr.federalregister.gov/current/title-50/chapter-VI/part-679/subpart-D/section-679.42#p-679.42(h)(1)(ii)

4.6 Analysis of Impacts: Alternative 1, No Action

Under Alternative 1, no action, the IFQ fisheries in the BSAI and GOA would be required to operate as described in Section 2.1. A summary of the impacts under Alternative 1 is included below. As noted in the GOA Sablefish Pots Review, many of these impacts can only be described qualitatively as there is no systematic data collection on some of these issues. The following impacts were described in the IFQ Committee meeting in March 2021 or at the subsequent April 2021 and October 2021 AP and Council meetings. Many of these impacts are also further described in contrast under Alternative 2 in Section 4.7.

As compared to elements in Alternative 2, costs associated with Alternative 1, No Action, are described below.

- Section 2.2 describes how wrapping the door closure of a pot with untreated cotton thread does not meet the regulatory definition of a biodegradable panel for any type of pot. Many, if not all, of the pots currently manufactured (slinky pots) to fish for sablefish are not designed in this way. The burden of time and monetary costs of cutting the mesh and sewing in a panel to meet regulations falls on those who use the gear. While these costs are relatively minimal, incremental increases in cost can add up for a harvester with many pots. Furthermore, some of those familiar with the fishery have noted that cutting the mesh to sew in a "panel" with biodegradable twine may compromise the mesh and thus the ability of the pot to retain fish. This is due to the way that in these lighter weight pots, the load of fish is borne by the webbing (Figure 4-10). The weight of the haul ends up on whichever part of the mesh ends up on the 'bottom' of the pot. While the analysts do not have specific data on the breaking strength of mesh pots and biodegradable twine, those with a knowledge of the gear type have indicated that a pot's entire catch of fish may be lost if even a few mesh links are severed.[43] Impacts of the different styles of biodegradable escape mechanisms are explained in further detail in Section 4.7.1 of the RIR and Section 5.2 of the EA.

Figure 4-10 Slinky pot with catch being hauled up.
Photo courtesy of Alexander Stubbs.

[43] personal communication, A. Stubbs, August 2021

- Additional buoys, flagpole, and radar reflectors required have a direct monetary cost and require more deck space. This is particularly challenging for smaller vessels that have already limited deck space.

- Those who would benefit from using jig gear (Section 4.7.3) to harvest sablefish IFQ would need to use other gear types to harvest IFQ. Jig gear may be much more feasible for some fishermen with small amounts of IFQ or smaller vessels, and if it is not authorized, efficiency may not be maximized for those operations.

- Sablefish and halibut IFQ fishermen would not have flexibility to choose a pot tunnel opening size that suits the needs of their operations. This could lead to harvesters not optimizing CPUE, not being able to select for specific size fish, and potentially require more effort (ex: increased time on the grounds and in turn, increased monetary costs for crew, fuel, etc.) to harvest quota. During the development of Amendment 101, while the Council did not provide any measure to explicitly define or enforce the "incidental" nature of halibut catch in sablefish pots, limiting the size of the tunnel opening was originally intended as a way to reduce incidental catch of halibut while fishing for sablefish with pots. The nine-inch tunnel opening is often referred to as a "halibut excluder" for this reason. As the fisheries have evolved and HAL fisheries have experienced increased whale depredation, the desire to exclude halibut from pots has also changed.

- Maintaining current pot limits and gear retrieval requirements may affect different groups of stakeholders in various ways.

    - Status quo pot limits and gear retrieval times could help to limit gear conflict and grounds preemption issues, a benefit to HAL vessels. However, as described more in Section 4.7.5, these limits may have the indirect effect of actually *increasing* the amount of time pot vessels need on the grounds in order to harvest their IFQ, as doing so with less gear can increase the amount of time required. There are no quantitative data with which to analyze the validity of these effects.

    - For vessels that are using conventional pots (not slinky pots), the gear retrieval requirements can cause stability issues and may slow down a vessel's ability to fish the gear most efficiently and leave the area once quota is harvested.

Alternative 1 in contrast to Alternative 3: Adak Quota Recipients, Processors, and Community

Selecting the No Action Alternative would leave in place the regulatory requirement that IFQ derived from QS held by the Adak CQE could only be leased to individuals who have been a resident of Adak for the previous 12 months, meaning the individual has maintained a domicile in the community during this time. This does not necessarily mean that the individual must have been physically located in the community for 12 months. Note that Adak residents are exempt from the requirement that an individual must have 150 days of work experience as a crewmember to be eligible to receive IFQ by transfer, which increases the opportunities for new entrants into the fishery to lease from the CQE.

Under Alternative 1, there would be no change in eligible individuals who can lease from the CQE and, if population trends continue, the number of eligible residents will likely continue to decrease. The recent population of Adak is closely tied to whether the processor located in Adak is in operation or not. Prior to 1997, the population was largely comprised of military personnel. The population has been, in general, declining since 2010 (Figure 4-11).

Larger community benefits derived from a stable fishing industry in Adak are closely connected to the operational status of the processing plant in Adak or, more historically, the presence of the military. There has been recent discussion surrounding the potential return of a military presence to Adak, but at this time there is no indication of when this may occur nor how large a presence it would be. Depending on how self-contained the military is, it may also serve to improve local infrastructure and offset costs. The reopening of the processing plant or return of a military presence would serve as a catalyst for civilian population resulting from increased air travel and demand for local services and could help to stabilize schools.

NMFS and the State have implemented numerous measures to revive the fishing economy in Adak. These include the allocation of 10% of the Western AI golden king crab TAC and allocation of the AI pollock fishery. However, despite these previous attempts it is unlikely that there will be an increase in residency numbers under Alternative 1 that will have any measurable positive impact on the community.

Alternative 1 may still offer employment opportunities to residents on non-resident boats, but this is most likely to occur if the processor resumes operations. For example, a non-resident on a HAL catcher vessel fishing in the AI State water Pacific cod fishery delivering to Adak could employ an Adak resident leasing halibut IFQ from the CQE as a crewmember and use that IFQ onboard during the Pacific cod fishery. Absent IFQ onboard, participants are required to discard halibut caught incidentally in this fishery.

Alternative 1 would provide opportunities for new fishery entrants to gain experience, especially since residents are waived from the 150-day experience requirement. In the past, testimony by representatives of ACDC and others have conveyed that there is interest in having the Adak CQE lease the resulting IFQ to young residents graduating from high school in need of employment, residents that may not have 150 days of crew experience in a U.S. commercial fishery. Many young fishermen have extensive experience operating a vessel out of Adak, or experience in fishing halibut subsistence, but there are fewer commercial fisheries in which to gain crew experience in the western Aleutian Islands compared to the Gulf of Alaska. Many young residents of GOA communities gain experience through the GOA salmon or halibut fisheries. Testimony has indicated that young Adak residents have more limited opportunities, potentially in the Pacific cod or halibut fisheries, in part due to the much smaller number of resident fishermen upon whose vessels one might be employed as crew. These opportunities would still be available to some extent under Alternative 3, if ACDC were to continue to give priority to residents as it has in the past.

In the past two years, the fees collected by the ACDC have dramatically declined (Figure 4-9)which impacts the available funds the non-profit can utilize in the development of fisheries infrastructure in the community. The decline in collected fees is correlated to the overall decline in pounds of halibut and sablefish harvested. It is important to note that factors such as the Covid-19 pandemic may have also impacted harvest patterns. Under Alternative 1, it can be expected that these fees, which are used to invest in the community, may continue to decline.

4.7 Analysis of Impacts: Alternative 2

4.7.1 Effects of Biodegradable Twine (Element 1)

Alternative 2, Element 1 proposes that regulations be revised to allow the use of biodegradable twine in the door latch or pot tunnel. With the development of new types of pots, fishery participants and gear manufacturers are working to address gear requirements while finding a design best suited for specific harvesting operations. Some types of pots, such as slinky pots, are designed with two doors so that one door can be tied shut and one can be used as a dump door (a door that is tied shut when deployed and opens to empty catch in the pot onto the vessel (‘H” in Figure 4-8, and shown on the right in Figure 4-11). The door that is tied shut is designed to have a biodegradable twine threaded around the door to keep the

door shut (white twine shown in Figure 4-12, and 'A', in Figure 4-11) when fishing and allows it to break apart if the pot is lost, rather than cutting the mesh and sewing in a separate biodegradable thread (Figure 4-13, 'B' in Figure 4-11). This allows the weight of the catch to be distributed in such a way that it is not straining on a breakable biodegradable twine, as it would if the twine were sewn into the side of the mesh. Those involved in the fishery have indicated that cutting the mesh on the pot can cause more premature failures. If the cotton thread fails in the mesh, it can "zipper" along the pot, compromising the structure of the pot (personal communication, A. Stubbs, August 2021). If the cotton twine fails on the door, the pot is not damaged. This design is used as an accepted biodegradable panel throughout other pot fisheries off of the West Coast and Canada.[44]

Element 1 (allowing the use of 'A' in Figure 4-11 and white twine in Figure 4-12, further referred to as the "biodegradable latch") would provide IFQ participants who use slinky pots the flexibility to choose a particular gear specification that is most effective for their operation. The additional benefit to those participants is that there would be no additional time or monetary burden to adjust their gear to comply with current regulations- a minimal, but existing cost to those participants using slinky pots.

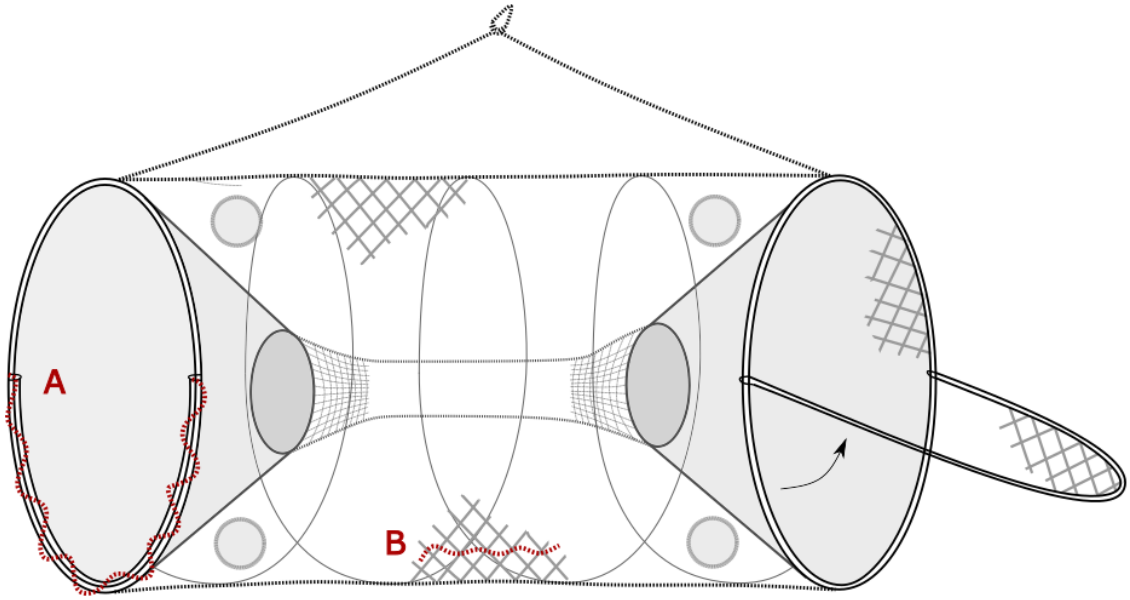


Figure 4-11 Slinky pot with biodegradable twine. A = Proposed element 1. Cotton biodegradable twine (aka bio twine, rotten cotton) laced around the hinged door opening on the end cap. B = status quo: 18" bio twine "escape panel" cut into pot mesh.

[44] 50 CFR part 660.230(b)(4): Traps or pots must have biodegradable escape panels constructed with 21 or smaller untreated cotton twine in such a manner that an opening at least 8 inches (20.3 cm) in diameter results when the twine deteriorates.

Figure 4-12 Slinky pot with door wrapped closed with cotton twine (white thread on bottom of photo). Proposed in Element 1, currently not allowed by regulation.
Source: NMFS OLE, B. Cheeseman.

Figure 4-13 Slinky pot with biodegradable twine/panel tied into the mesh of the pot, allowed by status quo regulation.
Source: https://www.fisheries.noaa.gov/alaska/commercial-fishing/longline-pot-gear-gulf-alaska-ifq-sablefish-fishery-frequently-asked

4.7.2 Effects of Buoy Configuration and Flagpole Requirements (Element 2)

Alternative 2, Element 2 proposes that regulations be revised to remove the requirement in the GOA to have a cluster of four buoys and remove the flagpole requirement but retain the "LP" marking requirement.

When Amendment 101 was in development, the Council recommended several gear specifications that were meant to distinguish longline pot gear from other fixed gear, when set on the fishing grounds. These specifications included four-buoy clusters, flagpoles, and radar reflectors. Buoys must be marked with information that identifies the vessel or the IFQ permit holder associated with that vessel. Four-buoy clusters and flagpoles were intended to reduce unintentional gear conflict in the GOA by enhancing the visibility of the gear-ends to other vessels that are physically present on the fishing grounds. Using

multiple buoys should help keep the gear marker above the water line in stronger currents, the force of which might otherwise submerge a single buoy by dragging on the anchor line.

At the time, the Council received testimony that these marking requirements would enhance the visibility of the ends of a longline pot gear set to other vessels that are on the fishing grounds and would not impose a substantial cost on vessel operators using longline pot gear. The testimony indicated that these marking tools are commonly used by vessel operators that deploy pot gear in fisheries in Alaska. Since then, further testimony and engagement in IFQ meetings and Council meetings have described that the additional gear increases demand on deck space; an issue particularly faced by small vessels attempting to switch to pot gear.

Radar reflectors are not defined beyond a general definition (performance standard), so as not to unintentionally impede the development of more effective, less costly, or more durable technologies. Fishery participants have indicated that radar reflectors are usually affixed to the flagpole. The analyst notes that several fishery participants, both through personal communications and public testimony, indicated that the common use of AIS (Automatic Identification System) in the fleet to mark the ends of longline pot strings has made radar reflectors obsolete.[45] Additionally, radar reflectors are an older technology that may be becoming more difficult to source. Radar reflectors are on the USCG's checklist for at-sea boardings, and OLE has indicated that it is fairly common to see radar reflectors on the boats using sablefish pots in the CGOA.[46] The use of AIS on fishing gear is not currently authorized by the Federal Communications Commission (FCC). Although NMFS is not able to recommend use of AIS, the Agency encourages the use of gear construction that enhances the safety as well as the reliable retrieval of gear. Gear enhancements that are beneficial to the IFQ fishing fleet should incorporate best practices and technology.

Expected socioeconomic impacts of Element 2 include gear costs and impacts to vessel and crew safety. Gear is a major cost for fishermen, so elements that prevent conflicts or otherwise reduce the likelihood of gear loss are benefits that merit moderate additional expenditures. That said, extra gear costs accrue only to the harvester and erode his or her profitability margin. Additional costs may fall more heavily on operators with smaller gross revenues. In general, gear specifications that pertain only to the GOA sablefish IFQ pot fishery but are not applicable in other fisheries such as those where pots are used to harvest IFQ in the BSAI, are a cost burden to the harvesters who are directly regulated by this action.

Impacts on vessel safety are detailed in Section 4.7.7. In summary, while less gear on deck may increase vessel stability, Element 2 could make gear in the water less visible to other vessels if no other means to enhance visibility are adopted.

4.7.3 Effects of Authorizing Jig Gear for Sablefish (Element 3)

Alternative 2, Element 3 proposes that regulations be revised to authorize jig gear as a legal gear type for the harvest of sablefish IFQ/CDQ in the BSAI and GOA. The 1993 Final Rule implementing the IFQ Program excluded jig gear from the definition of the sablefish fixed gear fishery (58 FR 59375, November 9, 1993), but included jig gear in the definition for halibut fixed gear. The allocation of sablefish for jig gear under Element 3 would come from the IFQ Program (fixed gears- HAL and pot).

Jig gear is a single, non-buoyed, non-anchored line with hooks attached (NPFMC 2012). The vertical lines are actively fished with baited hooks or surge tube jigs are attached. Vessels generally employ two to five jig machines per vessel. The mechanical jigging machines drop the jig weight to the bottom (or higher in the water column) and move the jigs up and down slightly to induce the fish to bite. Each jig machine may be adjusted to haul back when the right amount of tension is on the line (a set amount of

[45] Personal communication, L. Behnken, P. Clampitt, August 2021.
[46] Personal communication, B. Pristas. September 2021.

fish). Machines haul up the fish, which are then removed one by one (NPFMC 2012). Electric reels that are commonly used in sport fisheries are also used as jigs.

Most jig vessels target Pacific cod and rockfish; therefore, the majority of catch by vessels using jig gear is Pacific cod, rockfish, and halibut.[47] The jig fishery, though relatively small in terms of volume landed (Table 4-17), is a key fishery in the GOA, providing entry-level opportunity and contributes to a diversified fishing portfolio for combination fishing vessels throughout GOA coastal communities. This is a relatively inexpensive fishery to begin commercial fishing in, and many vessels can use jig gear, as it is a gear type that does not require a lot of space or vessel retrofitting to use.

Table 4-17 Jig landings (annual average 2014-2020)

	BSAI (tons)	GOA (tons)
GROUNDFISH[1]	54	1,659
HALIBUT	0	3
LING COD	0	22
Grand Total	54	1,738

Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT.
[1]Groundfish is comprised of 95.6% of Pacific Cod and 3.8% rockfish

While it is uncertain whether those who intend to harvest sablefish IFQ with jig gear also hold halibut IFQs, the analysts looked to the halibut IFQ fishery as a potential source to provide information on who may participate in a sablefish IFQ fishery. Table 4-18 shows both number of vessels that have used jig gear to harvest halibut IFQ as well as landings (in pounds) over the past five years. Much of the specific harvest data on the jig fishery for halibut IFQ is confidential due to the small number of vessels that participate in the fishery. All these vessels harvested IFQ in the GOA (Areas 2C, 3A, and 3B); no harvest of halibut IFQ with jig gear occurred in Area 4 during this time.

Table 4-18 Jig gear IFQ halibut landings (in lbs.) and number of vessels (2016-2021).

	# vessels	*Area 2C*	*Area 3A*	*Area 3B*	*Total lbs*
2016	12	*	3,606	*	4,886
2017	6	*	4,186	*	*
2018	4	*	853		*
2019	6		5376	*	*
2020	3		3,617		3,617
2021	5		30,913	*	*

Source: NMFS Restricted Access Management (RAM) division sourced through AKFIN.
Notes: Confidential data = *

There is little information on who may use jig gear to harvest sablefish IFQ as proposed under Alternative 2. The sablefish IFQ fishery is not fully harvested. Table 4-2 illustrated the percent of sablefish IFQ landed across groundfish subareas. In the GOA in 2021, 86% of sablefish IFQ was landed, 74% in the BS and only 17% in the AI. Despite the potential for further harvest, it is expected that the number of IFQ holders expected to use jig gear to harvest sablefish would be minimal. Most vessels that use jig gear are under 60 ft. LOA (Table 4-19), Discussions with stakeholders indicated that in general, IFQ holders with vessels that are too small to fish with pots or HAL gear are expected to take advantage of this

[47] NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

opportunity; but that there may be several scenarios in which someone may choose to harvest sablefish IFQ with jig gear.[48]

- A salmon troller in Southeast Alaska holds a small amount of sablefish IFQ, but their vessel is too small to fish with HAL or pot gear. As walk-on rates increase in the IFQ fisheries, it has become too expensive for some to justify bringing sablefish IFQ on board someone else's vessel.

- A jig fisherman in the Central GOA targeting another species also has sablefish IFQ. They catch sablefish and would no longer be required (nor allowed) to discard it.

- A sablefish QS holder with a small amount of IFQ jigs on a vessel already using HAL or pot gear (mixed gear trip). This may be less likely than other scenarios due to higher efficiency of pot and HAL gear; it may be inefficient to use jig gear in addition.

Table 4-19 Number of vessels using jig gear by length, BSAI and GOA combined.

	Length overall (ft)	*2017*	*2018*	*2019*	*2020*
GROUNDFISH		**51**	**49**	**73**	**61**
	<26	1			
	26-35	18	17	25	20
	36-45	24	24	31	26
	46-55	8	7	14	13
	56-65			2	2
	>66		1	1	
HALIBUT		**5**	**4**	**6**	**3**
	26-35	2	2	1	
	36-45	1	1	2	1
	46-55			1	2
	56-65	2	1	2	
LING COD		**7**	**12**	**9**	**8**
	<26			1	
	26-35	2	4	4	4
	36-45	5	8	4	4
Total		**63**	**65**	**88**	**72**

Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT
Note: Data include vessels in BSAI and GOA areas, combined.

There are several ways to estimate a rough maximum of the number of participants that may use jig gear to harvest sablefish IFQ. Table 4-20 shows the number of sablefish IFQ holders in each regulatory area in 2020. In 2020, 204 vessels (82%) that targeted sablefish were <60 ft LOA (Figure 4-14). In combination with input from stakeholders, it is anticipated that most vessels using jig gear would be <60 ft. LOA. Using this information, the analysts estimate that sablefish jig fishermen would be predominantly C-class sablefish QS holders, of which there were 1,568 in 2020. If current trends remain, it can be expected that most jig fishing would continue to occur in the GOA. This would indicate 1,507 sablefish QS holders in 2020. It is expected that this estimate is much higher than the number of QS holders who would use this

[48] Personal communication, L. Behnken, T. Fujioka, and D. Kasprzak, August/Sept 2021.

opportunity; this is a very high maximum bound, as many of these sablefish QS holders are expected to continue to use pot or HAL gear.

Those with knowledge of the fishery indicated that IFQ holders with less than 800lbs of sablefish may utilize smaller vessels that have not historically been in the fishery to harvest their small amounts of IFQ. As of 2020, there were 137 QS holders in the GOA that held less than 800lbs of sablefish IFQ and 28 QS holders that held less than 800lbs of sablefish IFQ in the BSAI (NOAA Fisheries, RAM 2021). A portion of these QS holders may walk on to other pot or HAL vessels. Using this method, one estimate for the maximum number of QS holders likely to use jig gear to harvest sablefish is 165 QS holders. Again, it is unlikely that all these QS holders would use jig gear, and the true estimate is likely below this number.

Overall, while socioeconomic impacts of Element 3 are expected to be limited, this action provides an opportunity for some IFQ participants to harvest sablefish IFQ with a new gear type, potentially increasing operational efficiency and revenue for those who take advantage of this opportunity.

Table 4-20 Number of QS holders and units in the sablefish IFQ fisheries in 2020 by area and vessel category

	QS holders				QS units				% TAC harvested
Area	A	B	C	Total	A	B	C	Total	
AI	49	76	41	165	17,952,283	11,319,633	2,643,346	31,915,262	72
BS	35	59	52	145	7,470,227	7,754,799	3,534,089	18,759,115	22
CG	72	324	463	850	17,557,104	53,057,658	41,070,992	111,685,754	64
SE	71	160	702	923	6,133,979	13,436,073	46,550,424	66,120,476	73
WG	57	136	98	289	13,671,401	15,597,495	6,752,807	36,021,703	81
WY	48	177	244	466	4,373,738	32,262,359	16,623,663	53,259,760	79

Note: Counts are not additive across areas.

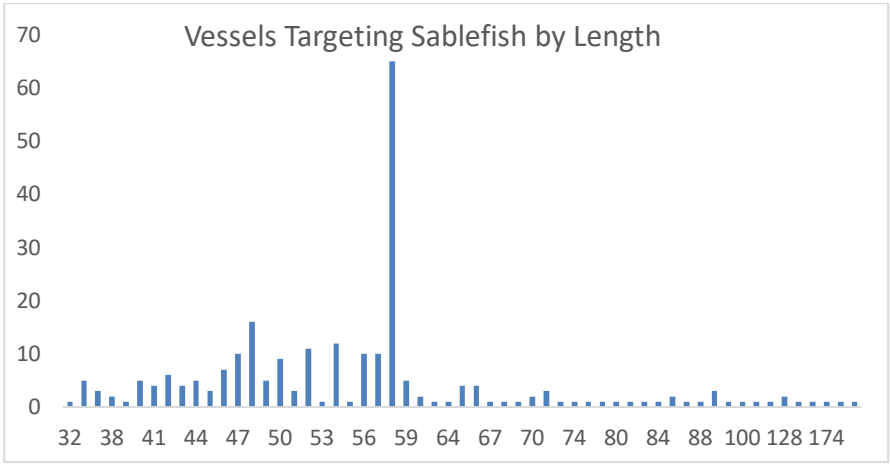


Figure 4-14 Number of vessels targeting sablefish IFQ by length (2021)
Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Further discussion of management and enforcement concerns of authorizing jig gear for sablefish IFQ are included in Section 4.9.1. Vessels that do not exceed 60 ft. length overall (LOA) and that are using jig gear (but no more than five jig machines, one line per machine, and 15 hooks per line in BSAI or 30 hooks per line in the GOA) are exempt from LLP requirements. Vessels that do not exceed 26 ft. LOA in the GOA and vessels that do not exceed 32 ft. LOA in the BSAI are also exempt from the LLP requirements. In the Bering Sea, an LLP is not required for catcher vessels <60' LOA using jig gear. Therefore, any vessel that fits these criteria that chooses to fish for sablefish IFQ using pot gear would also be exempt from LLP requirements.

4.7.4 Effects of Tunnel Opening Size (Element 4)

The effects of Alternative 2, Element 4 depend upon whether the option is included. Without the option language, Element 4 only removes the nine-inch tunnel opening requirement for vessels fishing sablefish IFQ with pot gear in the GOA that also have unfished halibut IFQ. As clarified in October 2021 and described in Section 2.2, **this would allow those who possess both halibut and sablefish IFQ concurrently to use a pot tunnel opening that is larger than nine inches. This element, as clarified, would not allow a vessel with only halibut IFQ on board to use a larger tunnel opening.**

The option under Element 4 would allow those who hold only sablefish IFQ/CDQ to also use pots with tunnel openings larger than nine inches in both the GOA and BSAI. Currently, vessels in the BSAI that are fishing halibut or sablefish IFQ/CDQ with pots are exempt from the nine-inch requirement as long as the vessel has unfished halibut IFQ/CDQ onboard.[49] There is no requirement to concurrently possess sablefish IFQ. This allows for a "directed" halibut pot fishery (those who hold halibut IFQ may retain legal halibut and may use larger pot tunnel openings) in the BSAI. However, those who hold only sablefish IFQ/CDQ (without halibut IFQ/CDQ) are not currently exempt from the nine-inch requirement in the BSAI.

Element 4, if implemented, would still maintain a mismatch of regulations in the BSAI and GOA, because a "directed" halibut pot fishery is authorized in the BSAI but this ability to harvest halibut IFQ in pots without concurrent sablefish IFQ would not be authorized in the GOA.

Removing the nine-inch tunnel opening requirement in the GOA would provide flexibility for fishermen to use pots that more effectively select for target catch. This flexibility may allow harvesters to target halibut more effectively (particularly in the presence of whales that depredate on HAL gear). With the option, this flexibility would also allow those harvesting sablefish IFQ/CDQ in the GOA and BSAI to target larger sablefish more effectively. Those who are fishing for sablefish or halibut IFQ/CDQ with pot gear would continue to be required to retain legal-size incidentally-caught halibut or sablefish for which they have the necessary IFQ.

To summarize the current interpretation of Element 4, pots used to fish IFQ/CDQ could be used with a tunnel opening larger than nine inches in the following situations:

- If Element 4 is adopted without the option: Fishing sablefish IFQ with unfished halibut on board. This would indicate someone on board holds sablefish IFQ and halibut IFQ. (This change would be specific to GOA, as it is already authorized in the BSAI).
- If Element 4 is adopted with the option: Fishing sablefish IFQ/CDQ **with or without** halibut IFQ/CDQ on board. This would allow IFQ fishermen **in the GOA and IFQ/CDQ fishermen**

[49] 50 CFR 679(15)(iii) *Halibut retention exception.* If required to retain halibut when harvesting halibut from any IFQ regulatory area in the BSAI, vessel operators are exempt from requirements to comply with a tunnel opening for pots when fishing for IFQ or CDQ halibut or IFQ or CDQ sablefish in accordance with §679.42(m).

in the BSAI to use larger tunnel openings if they have only sablefish IFQ/CDQ, or if they have both sablefish and halibut IFQ/CDQ.

Fishermen would **not be authorized** to use pots with a tunnel opening larger than nine inches in the following situations:

- Targeting pacific cod or any other groundfish other than sablefish. This would be any trip without sablefish IFQ/CDQ on board as well as any trip where pacific cod catch was so substantial it pushed the trip into the Pacific cod target. This could be problematic, as vessels would be in violation if they were using pots with larger tunnel openings, and accidentally caught a substantial amount of Pacific cod. Enforcement officials would likely not be able to determine a target fishery on the dock or at sea. NMFS OLE may only be able to enforce the tunnel opening requirement if there is no IFQ sablefish onboard.

- Targeting IFQ halibut in the GOA without sablefish IFQ onboard. (The analysts have referred to this as a "directed" halibut pot fishery.)

IFQ Fishing Versus Directed Fishing for Other Species

The action alternative would provide IFQ holders an opportunity to modify pot gear on a mixed trip in which both halibut and sablefish are the intended target, provided the vessel has quota for the appropriate areas for both species, or on a trip solely intended to harvest sablefish IFQ (under the Element 4 option). Based on Federal regulations at Section 679.7(f) (11), IFQ permit holders are prohibited from discarding halibut or sablefish caught with fixed gear for which they hold halibut or sablefish IFQ. Therefore, this alternative would also continue to *require* those who are fishing sablefish in the BSAI and GOA with pot gear to retain legal-size halibut for which they have the necessary quota, even if it were caught incidentally.

While necessary to the discussion in this analysis, the terms "incidental," "targeted," and "directed" are not used in the Federal regulations for the halibut IFQ fishery. With few exceptions, retention of legal-size fish is both allowed and required by those who hold the appropriate IFQ and are using legal gear. When a permit with unfished IFQ is not onboard, halibut is a prohibited species and must be discarded. Regulations do not refer to a "directed" halibut fishery, nor do they refer to "incidentally-caught", or "non-targeted," halibut but the terminology persists in discussion of the retention topic.

Directed fishing is defined in regulations in §697.2 as: *"… Unless indicated otherwise, any fishing activity that results in the retention of an amount of a species or species group on board a vessel that is greater than the maximum retainable amount for that species or species group as calculated under §679.20.*" Directed fishing in a Federal groundfish fishery means that NMFS Catch Accounting System assigns a "trip target" after the fact, based on the preponderance of the delivered catch. Unlike Federal groundfish fisheries, vessels fishing in IFQ fisheries are not directed fishing and do not have a target; rather, they simply fish and retain fish for which they are using legal gear and possess the necessary quota to cover their catch. **Therefore, when the analysts refer to "directed" halibut fishing (with pots), it is intended not to mean the regulatory definition of directed fishing, but rather to describe the intentional targeting of halibut.** This could refer to fishing in locations and depths where halibut are usually found, fishing halibut IFQ with pots without concurrently holding sablefish IFQ, and using pot gear that is designed to catch halibut, such as pots with a tunnel opening greater than nine inches.

During the development of Amendment 101, the Council was cognizant of concerns surrounding changes to the traditional nature of the directed halibut fishery, which has historically been prosecuted with HAL

gear (NPFMC 2016). The Council did not provide any measure to define or enforce the "incidental" nature of halibut catch in sablefish pots in Amendment 101, but in its letter to IPHC, assured the IPHC that it would monitor the amount and size of halibut caught in GOA sablefish pots so that it would be equipped with the information necessary to limit retention if it became an issue.[50] However, the nine-inch tunnel opening is often referred to as a "halibut excluder", as it was originally intended to reduce incidental catch of halibut while groundfish fishing with pots. As the fisheries have evolved and HAL fisheries have experienced increased whale depredation, the desire to exclude halibut from pots has also changed.

At its April 2021 meeting, the Council discussed the need to be proactive about whale depredation issues, and how 'getting ahead of the whales' in terms of depredation of halibut on HAL gear could prevent wastage of halibut and be beneficial to fishery participants. The Council noted that it may only be a matter of time before depredation of halibut on HAL in the GOA increases to similar levels experienced in the BSAI or by sablefish fishermen in the GOA. Those with knowledge of the fishery have noted that the whales have already become problematic enough on the edge in certain areas such as WYAK that less directed halibut fishing is occurring there.[51]

Allowing participants to more effectively target halibut in pot gear would increase operational efficiency; participants would not be required to deploy two different types of gear to target each IFQ species. Many of the participants in the IFQ fisheries hold both sablefish and halibut IFQ (Table 4-21). IFQ participants who carry both sablefish and halibut quota are quite adept at targeting one species or the other or both species at the same time by fishing different depths or habitats. Requiring a vessel to use a different size tunnel opening for different IFQ species may unnecessarily restrict fishery participants and reduce operational efficiency by requiring different gear specifications to be used to harvest separate IFQ species that could otherwise be retained simultaneously. Conversations with and testimony from those involved in the fishery indicate that there are some IFQ fishermen who would benefit from the flexibility to use a larger tunnel opening for targeting larger sablefish, and they would prefer this element to not be exclusive to halibut IFQ holders. In response to this testimony, the Council added the option under this element to also remove the nine-inch requirement for vessels targeting sablefish IFQ.

Table 4-21 Number of QS holders- crossover

Area	# Individuals holding halibut QS ONLY (no sablefish)	# halibut QS holders who also hold sablefish IFQ	# Individuals holding halibut QS (total)
2C	745	300	1045
3A	838	457	1295
3B	290	214	504
4A	106	116	222
4B	39	54	93
4C	34	33	67
4D	17	43	60
4E	92	9	101
4F	2	4	6
GOA (2C, 3A, 3B)	1670	617	2287
All Areas	1865	656	2521

[50] The IPHC has been notified of the IFQ omnibus action in the US Contracting party report: https://www.iphc.int/uploads/pdf/am/am098/iphc-2022-am098-nr02.pdf
[51] Personal communication, A. Stubbs, August 2021.

Source: NMFS Restricted Access Management (RAM) division sourced through AKFIN.

Fishery participants have indicated that the nine-inch maximum requirement confounds their ability for designing a pot that can catch sablefish *and* halibut, which would increase harvest efficiency. While it is unclear whether all vessels using pot gear to harvest sablefish IFQ in the GOA would use the flexibility afforded by Element 4, those that choose to would benefit from this flexibility, as they would be able to choose a gear design that allows increased selectivity of target catch. It is not clear how many more harvesters would switch from targeting IFQ species using HAL gear to pot gear as a result of this action. However, as described in Section 3, it is not likely that there would be a large influx of vessels switching from HAL to pot gear as a direct result of this flexibility alone.

Element 4 with the option would also allow those fishing sablefish IFQ with pots in the GOA and the BSAI to use tunnel openings greater than nine inches. While this is already authorized in the BSAI if the vessel also has halibut IFQ on board, this flexibility does not currently exist in the BSAI for those with sablefish IFQ only. There is potential for this to increase the size of sablefish in pots. If combined with the use of appropriately-sized escape rings (see Sections 4.9.1 and 5.2.2), sablefish fishermen may be more able to improve size selectivity, for which there is a private incentive. Incorporating escape rings into pot gear can help reduce the number of small sablefish landed and potentially increase the overall value of the landed catch (i.e., given that the IFQ fishery operates under a mandatory 100% retention regulation and small fish have lower value per pound) (Goethel et al. 2021, also see NPFMC 2021d for information on ex-vessel revenue by market category). This could benefit those in the sablefish IFQ fishery. Without escape rings (not currently required by regulation) or escape rings that are not appropriately sized, it is possible that vessels could experience an increase in catch of smaller sablefish. Because IFQ sablefish, regardless of size, must be retained under current regulations, this could lead to lower dockside prices for smaller sablefish.

Despite increased flexibility under Element 4, this element would not offer increased operational flexibility for all IFQ holders. The Council's clarification in October 2021 would not allow a vessel with *only* halibut IFQ on board to retain halibut in pot gear in the GOA, nor would it allow pots with tunnel openings greater than nine inches to be used to retain halibut unless sablefish IFQ is also on board. As shown in Table 4-21, 1,670 QS holders in the GOA hold only halibut IFQ.

Additionally, Element 4 without the option could still present operational challenges for some IFQ fishermen. One fishery participant noted that if fishery participants use all their halibut IFQ earlier in the season, pots with a greater than nine-inch tunnel opening would no longer be in compliance with the regulation. This poses a challenge to fishery participants who then continue to fish for sablefish later in the season, as it would require either swapping out pot tunnels or using a different set of pots entirely that have the appropriate tunnel size. For most fishermen, it is unrealistic to have two different sets of pots for IFQ species- one for sablefish and one for halibut. In contrast, the HAL fisheries are not subject to the same type of requirement to switch out gear when switching between species. One solution to this would be fishermen saving some of their halibut IFQ "in their pocket" so that they remain able to use the exemption and stay in compliance with regulations. On the other hand, while fishermen do need to plan harvest timing within certain seasons, they have the flexibility to choose the timing of their operations, taking into account where fish will be at certain times of the year and what other fisheries they need to plan for within their fishing portfolio. In this way, Element 4 without the option would provide some flexibility in that IFQ fishermen could more effectively target halibut or larger sablefish, but flexibility is still limited by the requirement to have unfished halibut IFQ. Therefore, fishermen who possess only sablefish IFQ would not be able to benefit from the flexibility provided under Element 4 without the option included. Element 4 *with* the option would resolve this issue, as it would allow vessels with sablefish IFQ but that do not possess halibut IFQ to use a larger tunnel opening as well.

4.7.5 Effects of Pot Limits and Gear Retrieval Requirements (Elements 5 and 6)

Alternative 2, Elements 5 and 6 propose that regulations be revised to change pot limits and gear retrieval requirements, respectively. These two elements are included in the same section here because the types of impacts of these elements on IFQ fishery participants are expected to be similar.

Considering area-specific pot limits as part of GOA Amendment 101 allowed the Council to account for the make-up of the fleet and the physical nature of the sablefish fishing grounds in each management area. The Council acknowledged that lower pot limits could be appropriate in areas where the fishing grounds are spatially concentrated and grounds preemption is a pressing concern, or where the local fleet has a historically participating component of small, short-range vessels lacking the capacity to deploy and retrieve longline pots or pack a large hold of sablefish over many days and long distances. The Council adopted a precautionary approach by recommending pot limits for all areas of the GOA. The intent of the pot limits was to cap the total amount of fishing grounds that any single vessel could preempt at a given time. A pot limit can also be viewed as a measure to equalize effort between vessels converting to longline pot gear and those continuing to fish with HAL gear (NPFMC 2016).

However, limiting the number of pots reduces operational efficiency if the limit is lower than what a skipper deems optimal for his or her vessel. Relative to no limit, or a limit that exceeds what is privately optimal, a low limit may increase variable fishing costs such as fuel and time. More restrictive pot limits may cause fishermen to turn over their longline pot gear more often. Reduced soak times could marginally reduce one of the benefits of longline pot gear – size selectivity. More time on the bottom provides smaller fish an opportunity to swim out of the pot through an escape ring. Ideally, skippers would use their knowledge of catch rates and fish size in a particular area to choose the amount of soak time that selects for larger fish but allows them to keep rotating and re-baiting their strings of longline pot gear. If the maximum number of pots is lower than what allows for constant gear rotation at the optimal period, fishermen experience greater stand-down time while longline pot gear is soaked to sort for fish size.

Changing the pot limits for WY and/or SEO to 160 or 200 pots per vessel (suboptions a and c, respectively) would allow each vessel to deploy 40 or 80 more pots in those areas, but would keep pot limits lower than other parts of the GOA, which could address some of the concerns of the HAL fleet in terms of the gear capacity on the fishing grounds and gear conflicts. Changing the pot limits to 300 pots per vessel (suboption c) would maintain consistency across all areas of the GOA, but gear conflicts and grounds preemption issues would be more likely in congested areas than under a lower limit.

Element 6 would either remove GOA gear retrieval requirements entirely (option 1) or increase the amount of time gear can be left on the fishing grounds to 7 days for all GOA areas (option 2) with a suboption for 3 days in SEO. Gear retrieval requirements were primarily meant to limit a vessel's "footprint" on the fishing grounds.

Since implementation of the GOA sablefish IFQ pot fishery, no systematic data collection on preferences of gear retrieval requirements has occurred. NPFMC 2021 and subsequent testimony highlighted some of the challenges that pot fishermen experience in the GOA with gear retrieval requirements. One such challenge is that due to bad weather, fishermen do not want to bring gear back in due to stability concerns. This is expanded on in Sections 4.7.7 and 4.9.1 on vessel safety and enforcement considerations. For vessels still using conventional pots (as opposed to slinky pots), the weight of these pots and the space needed on deck can increase stability issues and risk.

Gear retrieval requirements can also increase operational costs such as monetary expenditures on fuel, and crew time. One example of this is when it would be more effective for a vessel to do a "town soak" in which gear is left on the grounds to fish, while the vessel goes into town to sell. Some stakeholders have indicated that this actually gets them off the fishing grounds faster overall, and allows them to consume

less fuel. Less time on the grounds overall could decrease potential for gear conflicts, however it is likely that amount of time on the grounds and the effect of gear retrieval requirements varies by each operation and the geographical area being fished.

As the number of vessels using pots increases, particularly in the SE GOA, increasing pot limits and/or gear retrieval requirements could increase the potential for gear conflicts with the HAL fleet. However, fewer HAL vessels may lead to a corresponding decrease in the potential for gear conflicts. Table 4-7 in Section 4.5.2 shows the large increase in the number of vessels using pots in all GOA management subareas, particularly between 2019 and 2020. During the GOA sablefish pot review, stakeholders and IFQ Committee members noted their concerns surrounding the higher potential for congestion and gear conflicts in the Eastern Regulatory Area, particularly in SEO. The suboption to have a 3-day gear retrieval requirement in the SEO area may better address some of these concerns, assuming gear would be left on the grounds for an overall decreased amount of time, taking into account the factors noted in the previous paragraph.

Current regulations require CPs in SEO to remove the gear from the grounds within 5 days (50 CFR 679.42(l)(5)(iii)). This requirement was not included as part of the Council's Amendment 101 motion,[52] but it was included in the proposed and final rules.[53] As of 2021, only 3 CPs were using pots to harvest sablefish IFQ in the GOA, none of which landed catch in SEO.

Even if fishery participants choose to use maximum flexibility provided through this action (i.e., higher pot limits under Element 5, extended gear retrieval time under Element 6), it is expected that harvesters will likely find some optimal number of pots and amount of time on the grounds beyond which the costs of fishing (fuel, time, bait) are not offset by increased catch. Vessels will eventually be limited by the number of pots or weight of catch they can carry, or by optimal time on the grounds beyond which the quality of catch may deteriorate and the vessel needs to deliver. Previous documents have described an optimal amount of time for gear to be left on the grounds after which product quality diminishes and harvesters have an incentive to optimize pot gear fishing effort to maximize IFQ harvest in the minimum amount of time (NPFMC 2016, NPFMC 2019). Therefore, it is likely that even under Alternative 2 Elements 5 and 6, vessel operators privately limit the number of pots they deploy and would not leave pot gear deployed for unnecessarily extended periods of time.

NPFMC 2016 and discussion during the 2021 IFQ Committee and Council meetings noted that vessels using HAL gear are not limited by regulation in the amount of gear that they can deploy nor the amount of time they can leave gear on the grounds, and that pot limits and gear retrieval requirements are borne by pot fishermen in the GOA alone.

4.7.6 Discussion of Interacting Elements under Alternative 2

The elements under Alternative 2 may be chosen independently of each other, but it is important to consider the interactions of the chosen elements and the potential for cumulative impacts under certain combinations. Certain elements of Alternative 2 could differ in terms of the magnitude and type of impacts depending on which other elements are chosen as part of the Council's preferred alternative.

The following interactions of specific elements are worth highlighting:

- Element 4 (nine-inch maximum size of tunnel opening exemption), Element 5 sub-option b) (300 pot limit GOA wide), and Element 6 option 1 (remove gear retrieval requirement) chosen

[52] https://npfmc.legistar.com/View.ashx?M=F&ID=3702492&GUID=2A0DE356-9E58-4E4C-A066-30DF11E98296
[53] 81 FR 55408, 81 FR 95435

together would offer the most flexibility and could yield the largest magnitude of potential impacts. Potential impacts of this combination:

  - IFQ pot participants would benefit from maximum flexibility. Ability to use more pots under Element 5 combined with more time allowed on the grounds under Element 6 could increase likelihood lost gear and gear conflicts, unless, as described in Section 4.7.5, operational efficiencies provided through these elements actually result in vessels using pots to have a small overall fishing footprint.

  - Potential negative environmental impacts would also be cumulative: If more pots (Element 5) are designed with a larger tunnel opening (Element 4), any increase in incidental catch due to larger tunnel openings as described in Section 5.2.2/5.4 could also be exacerbated.

- If Element 2 is not chosen, but Element 4 is chosen: requirements that apply to gear "deployed to fish sablefish IFQ," for example, buoy and flagpole requirements, are not currently applied to gear used to fish halibut IFQ. Therefore, depending on how NMFS defines "gear deployed," there could be a situation where vessels intending to fish for sablefish have buoy and flagpole requirements that are different from and inconsistent with requirements for vessels intending to fish halibut, despite both using the same longline pot gear type.

- Allowing increased number of pots through Element 5, combined with increasing use of slinky pots changes to the tunnel opening under Element 4, yields uncertainty in impacts across resource components because of the limited data collection with which to differentiate slinky pots from conventional pots. This is expanded on in Section 4.9.1.

4.7.7 Impacts on Vessel Safety

Under the action alternatives, vessels are not being required to carry any extra gear and would have the option to participate in the opportunity created by this action. Alternative 2, Elements 2, 5 and 6 may impact safety for vessels using pot gear in the IFQ fisheries, and other vessels on the grounds, though it is unlikely that vessel safety would change significantly from the status quo.

More gear on deck can lead to a decrease in vessel stability and in turn the safety of crewmembers. Element 2, which would eliminate the buoy, flagpole, and radar reflector requirements, would reduce the amount of gear required for vessels deploying pot gear for IFQ in the GOA (described in Section 4.7.2). However, Element 2 may also leave pot gear less visible to other vessels if other means to detect gear in the water are not adopted by the fleet. Overall changes to the footprint of the fishery due to Elements 5 and 6 are unknown. If gear is not visible to other vessels, any increase in the fishery footprint could increase gear conflicts and safety concerns for other vessels fishing in the area. Due to this concern, fishery participants have reiterated the importance of having both ends of the gear marked. Marking both ends of each longline pot string has two main benefits. First, other fishermen can more easily discern the location of the pots on the ocean floor – roughly on a line between the buoys – so gear conflict would be marginally easier to avoid. Second, if gear conflict does occur and a groundline is parted, the longline pot string could be hauled up from the buoy on either end as opposed to having to grapple for part of the lost string as it sits on the bottom.

Element 5, pot limits, could increase the amount of pot gear allowed on the fishing grounds. Element 5 could result in an increase in the number of pots onboard a vessel, though any increase in the number of pots is voluntary under this action. All vessels would continue to be subject to stability standards stating that vessels may not have instability resulting from overloading, improper loading, or lack of freeboard.

Element 6, changes to gear retrieval requirements, would either eliminate gear retrieval requirements or increase the amount of time gear can be left on the fishing grounds (as described in Section 4.7.5). Increasing the flexibility in the amount of time that vessels are allowed to remove their gear from the grounds could alleviate occurrences of vessels attempting to tend their gear in unfavorable ocean conditions or poor weather.

4.8 Analysis of Impacts: Alternative 3

Alternative 3, a five-year exemption from the requirement that IFQ pounds derived from Adak CQE-held QS be used only by an eligible community resident of Adak, would require a change to Federal regulations at 50 CFR 679. The exemption would allow ACDC, the non-profit which has purchased and holds halibut and sablefish IFQ, to lease QS to non-residents on an annual basis to increase utilization of CQE-held quota and stimulate a stable fishing economy in the community.

If selected, Alternative 3 would be contrary to the first performance standard of the CQE Program (listed in Section 4.5.3) but may increase benefits derived by the community as a whole and better ensure that leased quota does not go unharvested. A five-year exemption of the residency requirement alone is not likely to attract a large number of residents back to Adak and stabilize the fishing economy but is a crucial component of a larger effort to assist the community in establishing a sustainable civilian economy.

Aside from the public reports provided annually by ACDC, data on CQE-held IFQ are limited and data that do exist are confidential.

4.8.1 Impacts on Adak Quota Recipients and the Community

Under Alternative 3, the ACDC would be able to lease IFQ derived from CQE-held QS to both residents and non-residents of Adak. The beneficial impacts of Alternative 3 would most likely be directed towards recipients of CQE-derived IFQ, and the community, as a result of any economic benefits that are gained due to this action.

The residency requirement has surfaced several times previously in the context of the GOA CQE Program. In the 2010 Review of the Community Quota Entity (CQE) Program under the Halibut/Sablefish IFQ Program, it was noted that the 12-month residency requirement provides a barrier as communities attempt to provide fishing opportunities as an incentive for residents to return to the community. One of the primary objectives of the CQE Program is to provide an opportunity for employment and fishing effort in CQE communities that have seen a transfer of QS out of their communities, and thus are attempting to attract resident fishermen back into their communities, including young fishermen. However, the current situation in Adak is unique. Unlike the GOA communities, the population is closely linked to the status of the local processor, there are less diversified fishing opportunities, and an original goal in the development of the Adak CQE was to attract residents back into the community rather than retain current residents. These have all contributed to the difficulties in developing a sustainable economy ever since the departure of the military.

Alternative 3 has the potential to make it easier for individuals who lease QS to find a vessel to harvest IFQ. As noted, young residents of Adak have difficulty gaining commercial fishing experience and therefore struggle to find vessels willing to take them on as crew. Non-residents who have gained experience in fisheries outside of the AI may be more successful in finding access to a vessel to fish leased community-held IFQ on, ensuring that community IFQ is more fully utilized.

To *ensure benefits are equitably distributed throughout the community*, ACDC has always prioritized the leasing of QS to residents even during years when the exemption was in place. During the first five years, this was done through the points-based distribution criteria (4.5.4). Despite a residency exemption during

the first five years of the program (2014-2018), Adak residents have been the primary beneficiary of halibut and sablefish IFQ pounds derived from QS held by the ACDC and community quota has only been fished on Adak-based vessels since 2016 (Table 4-10; Table 4-13). From 2015-2021, more than 50% of the halibut and 100% of the sablefish was leased to Adak residents (Table 4-11; Table 4-12). The CQE has not appeared to have 'maximized benefits' by leasing to the highest bidder and deriving benefits in the form of economic revenue over job opportunities to residents – a potential consequence previously discussed by the Council.

While there are benefits to Alternative 3, an operating processing plant may be crucial for the benefits of Alternative 3 to be fully felt, as non-residents who have previously leased quota were captains and crewmen who had history delivering to the processing plant in Adak. Without the plant operating, there could likely be less port-calls to the community and less fishermen around to lease the quota, described in Sections 4.5.4.2 and 4.5.4.3. As previously noted, Peter Pan Seafoods Co. LLC has suspended their plans to reopen the Adak processor. IFQ holders attempting to fish CQE-held IFQ will need to find alternative means of landing and processing fish. The reopening of a processing plant is essential to rebuilding a pool of resident fishermen.

One argument for the initial five-year exemption was to offer an opportunity for non-resident cod fisherman to lease IFQ to retain halibut and sablefish bycatch. This opportunity was not often used, and only one or two vessels, both of which are Adak-based, may have utilized IFQ in this way.[54] With no Pacific cod processing currently occurring in Adak there is a decreased likelihood that non-residents may be incentivized to lease quota for this purpose.

The first performance standard was intended to encourage CQEs to lease IFQ to residents that would employ residents of the eligible community as crew members. During the previous residency exemption, it was rare for a vessel with a non-resident who had leased IFQ from the CQE to also have residents of Adak employed on it. Alternative 3 may result in a similar situation, given that there is a limited pool of residents in Adak with fishing experience. Non-resident lessees may opt to employ more experienced non-residents on their vessels over those who reside within the community.

Employment

One of the primary objectives of the CQE Program is to provide an opportunity for employment and fishing effort in CQE communities that have realized a transfer of QS out of their communities, thus, many CQE communities want to attract resident fishermen back to their communities. Alternative 3, as compared to Alternative 1, would provide one way to encourage non-residents to return, and eventually become residents. However, without the reopening of the processing plant or the return of a military presence, the employment structure in Adak is unlikely to change under Alternative 3 when compared to the No-Action Alternative. With no other shore-based processor in the community, the Pacific cod processing activity at the Adak shoreplant accounts for a large proportion of local employment in Adak. The operations at the processing plant increase demand for a variety of services including support for crew rotations, fuel supplies, and emergency medical services at the local clinic. Alternative 3, on its own, would contribute minimally to overall increases in employment in the community.

ACDC Payments and Tax Revenue

Allowing non-residents to lease community IFQ would directly contradict the first performance standard. However, the decrease in population has resulted in an outmigration of residents qualified to lease QS and has likely influenced the drop in halibut and sablefish landed. Re-opening of a processing plant in Adak

[54] Personal correspondence, D. Fraser,, 6/17/2021

would likely draw individuals to the community and increase the number of eligible residents, but as noted earlier, all previous plans to reopen the plant have been suspended.

In 2019 and 2020, the funds collected by ACDC were drastically lower than they had been in previous years, which reduces the amount of money available to further develop the fisheries infrastructure of Adak (Figure 4-9). Under Alternative 3, the leasing of CQE to non-residents could increase the revenue that ACDC would be able to collect and put back into building and stabilizing the fishing economy of Adak. Although the Council has previously emphasized that one of the primary goals of the CQE program is to enhance participation in the fishing industry, the five-year exemption could provide enough time for the community to rebuild its population while allowing ACDC to continue to utilize funds to enhance the fishing infrastructure in the community. In regard to the quota distribution process, it is important to note that although NMFS does require that a criteria is developed, it does not specify what that criteria may be. If this action were to move forward, the Council may want to consider specifying ACDC implement the same or a similar distribution system to ensure direct benefits via receiving CQE-held QS are first realized by residents.

Alternative 3 alone is unlikely to revive the fishing economy in Adak but is a component of multiple ongoing efforts that could positively impact the community and revive its fishing economy. There is no guarantee that the five-year exemption alone, or even in combination with other ongoing efforts, would improve the current economic situation in Adak. The community would benefit from operating businesses that can provide consistent employment –in conjunction with a consistent flow of fish, this exemption under Alternative 3 is one piece of a larger effort to build that business portfolio. However, increasing incentives for vessel operators to operate out of and deliver to Adak and landings of leased halibut and sablefish QS will be crucial in ensuring a processing plant is able to become established and stable, which could further assist in rebuilding the local economy. and this exemption is one piece of a larger effort to build that business portfolio

4.8.2 Impacts to Other IFQ Fishery Participants

The proposed action under Alternative 3 does not directly regulate participants in the IFQ Program that do not use IFQ derived from CQE-held QS, and would not affect the general trends relevant to QS and vessel use under the status quo. Under Alternative 3, non-CQE participants in the halibut and sablefish fisheries would continue to be subject to the same rules in the existing IFQ Program without change. However, Alternative 3 may create additional opportunities for vessel owners to use IFQ (derived from CQE-held QS), whether or not the vessels are owned by residents of the CQE community. This is because residents of Adak who do not own vessels could lease annual IFQ from the CQE and bring it onboard any eligible vessel.

If an individual harvesting halibut in Area 4A or sablefish in the AI uses any IFQ derived from CQE-held QS on a vessel, then that vessel would be limited to 50,000 lbs of Area 4B halibut IFQ and 50,000 lbs of AI sablefish IFQ derived from CQE-held quota per fishing year. However, in total, the vessel would be subject to the overall vessel use caps applicable in the general program, which allows for the use of IFQ over and above the 50,000 lbs, as long as it is not derived from quota held by the CQE. As mentioned previously, one possible scenario is that hook-and-line catcher vessels fishing in the AI State water Pacific cod fishery that deliver to Adak could employ an Adak resident leasing halibut IFQ from the CQE as a crewmember, and use that IFQ onboard during the Pacific cod fishery. Absent IFQ onboard, participants are required to discard halibut caught incidentally in this fishery.

No significant effects on individual participants in the IFQ fisheries, or residents of non-CQE communities, is anticipated under Alternative 3 compared to the status quo. The analysis for Amendment 102 already analyzed the impacts of this action on existing IFQ holders and the market; the only change from status quo due to this action is extending the exemption to the residency requirement.

4.9 Management, Monitoring, and Enforcement Considerations

4.9.1 Alternative 2

This section describes the management, monitoring, and enforcement considerations for each element of Alternative 2. This section also highlights challenges for regulatory changes and some of the current challenges with collecting survey and fishery-level data on tunnel shaped collapsible pots, herein referred to as "slinky pots" (refer to Section 4.5.2 for a description of this novel gear type).

Regulatory considerations for Alternative 2

The scope of regulatory changes that may be necessary for this action could be extensive, depending on the options selected by the Council. Regulations defining or referencing the definition of authorized fishing gear exist throughout § 679. Authorized fishing gear is defined in 679.2 and references additional regulations in Table 15 to Part 679 (Gear codes) and § 679.24 for additional gear limitations. Regulations at § 679.7 include prohibitions specific to the use of fixed gear for the purpose of harvesting halibut as well as prohibitions specific to the use of gear in the IFQ fisheries. Regulations at § 679.42 include further detail about authorized fishing gear in the halibut IFQ and sablefish IFQ fisheries as well as additional gear limitations and gear marking requirements. Additionally, many other regulations apply based upon which gear is being used; for example, record keeping and reporting requirements at 679.5 are defined based upon which authorized gear type is being used. Regulations at § 679.51 define observer coverage requirements based upon a combination of vessel type, gear use, and fishery management program. To modify authorized fishing gear definitions, NMFS must consider the potential implications as they may percolate throughout the extensive regulations as well as the recordkeeping and reporting requirements. In February 2022, the Council requested a discussion paper to explore regulatory changes to simplify pot gear regulations, allow for flexibility to use pots in the BSAI and the GOA groundfish fisheries.[55] While the scope of this action is limited to specific changes to the use of pot gear in the IFQ/CDQ fisheries, the discussion paper requested by the Council would provide a more holistic evaluation of existing regulations and identify areas where streamlining could occur.

Element 1

Beginning with the 2017 fishing season, the Council recommended and NMFS implemented regulations to authorize, but not require, the use of longline pot gear in the GOA IFQ sablefish fishery and allow retention of halibut. Since this authorization in the GOA, there has been an increase in pot gear use, as well as an increase in gear modifications, such as slinky pots. In April 2021, the Council asked for NMFS to clarify if slinky pots were a legal gear type for IFQ/CDQ fisheries, in part, due to the increase in pot gear and the widespread use of slinky pots. NMFS clarified that slinky pots may be used as long as the pot is equipped with an 18-inch biodegradable panel. These requirements are described in detail in the Frequently Asked Questions webpage published by NMFS in 2021.[56]

Element 1: Data Collection on Slinky Pots

NMFS is working to gather more data on slinky pots to determine a suite of effects of using this gear type over HAL gear or conventional pots (Table 4-18). Specifically, the AFSC is working to explore the differences between slinky pots and square pots for catch rates, catch composition, and size selectivity through projects in 2021 and 2022. Pot catch per unit effort (CPUE) is currently not included in the

[55] https://meetings.npfmc.org/CommentReview/DownloadFile?p=0ec25cb3-90d8-4b5c-ba4a-6c9e0a8b89f6.pdf&fileName=E%20Motion%20-%20Pot%20Gear%20Discussion%20Paper.pdf
[56] https://www.fisheries.noaa.gov/alaska/commercial-fishing/longline-pot-gear-gulf-alaska-ifq-sablefish-fishery-frequently-asked

sablefish fishery CPUE index, and stock assessment authors are continuing to explore development of a catch rate index for HAL and pot gear (Goethel et al. 2021).

In the summer of 2021, AFSC conducted a three-day pilot experiment in the West Yakutat region using slinky pots. The objective of this pilot study was to compare catch rates and catch composition between standard longline survey HAL gear and slinky pots. Each day, two sets were deployed in comparable geographic areas, depth profiles, and habitats. One set was composed of standard survey HAL gear with 90 skates, and the other set was composed of 90 slinky pots, each fitted with four 3.5-inch escape rings. To obtain catch rates and species composition, the catch on each hook and within each pot was recorded to species level. Additionally, length data were collected to examine the length compositions of the catch. This pilot study was a small-scale experiment, but provided preliminary data needed to design future experiments on catch rates, catch composition (e.g. bycatch), and size-selectivity of slinky pots. In 2022, the Observer Program will conduct a special project to explore pot gear attributes in the sablefish IFQ /CDQ fishery. This project will provide data on pot types and configurations that are needed if pot data are added to stock assessments in the future.

Table 4-22. Options and challenges for collecting data on slinky pots.

Data set	Change	Data Resolution	Challenges	Status, Timeline, and Feasibility
Catch Accounting System (CAS)	Identify slinky pots in catch data	Trip	● Currently does not differentiate pot "type" ● Pot type data collected through eLandings, EM, and observer data incorporated into CAS	Longer term. Data is available starting with collection in 2021.
eLandings	New pot type added in 2021. Users can differentiate between rigid and collapsible (i.e., slinky pots)	Trip	● Confusion around gear codes, need to improve outreach strategies with the implementation of a new data entry field ● Use of multiple types of pots challenging and requires multiple landing reports.	Implemented as of fall 2021. Education and outreach are ongoing. NMFS and ADF&G are continuing to explore ways to collect necessary data more efficiently.
Federal logbooks	New checkbox or entry on Daily Fishing Logbook (DFL)	Haul	● Would require changes to regulations and an update to the logbook ● Requires reprinting of logbooks	Longer term

			• Logbook data are not entered into a database for the entire fleet • Self-reported and potential issues with data quality would require outreach strategies to fishery participants	
IPHC logbooks	New field	Haul	• Funding and complications with providing additional data	Not a feasible option
Fixed gear electronic monitoring	Include ID of pot type in PSMFC video review data	Haul	• Only available for trips selected for EM monitoring • Limited to type of pot and configurations are difficult to collect.	Already exists in video review protocol and NMFS needs to modify data structures to incorporate the information. In place for 2022.
Observer data	Observers will collect data on pot gear attributes (types, configurations, and numbers)	Haul	• Haul level, not trip level • Short term project	Pot Gear Attributes Project will run for the duration of the 2022 IFQ sablefish fishery
Prior notice of landing (PNOL)	Data clerk asks what type of gear fishermen is using at time of PNOL reporting	Trip	• This OLE dataset is typically used by NMFS • Would replicate the information that could be gathered in eLandings	Would require changing Standard Operation Procedures (SOPs) for data entry/what's reported out, doesn't fit into the description of the contract, and would likely require a regulatory change

Element 1: Biodegradable Panel

Currently, the requirements for a biodegradable panel state that each pot used to fish groundfish must be equipped with an 18-inch biodegradable panel that is within 6 inches of the bottom of the pot and is sewn with untreated cotton thread no larger than No. 30 (50 CFR part 679.2(15)(i)). This is described in greater detail in Section 2.2. When drafting any change to regulations, NMFS considers the scope of the regulation change and how the new regulations would be enforced by OLE.

Regulatory changes necessary to implement Element 1 would apply to the halibut and sablefish IFQ/CDQ fisheries in the BSAI and GOA IFQ regulatory areas. The current regulatory requirement for a biodegradable panel in pot gear applies to groundfish pots and does not specify exemptions specific to IFQ/CDQ fisheries. To implement the language in the motion, NMFS would add a paragraph to the existing definition of authorized pot gear at § 679.2(15)(i) that would describe the use of a biodegradable twine to tie the door on the end of a slinky pot shut as an acceptable alternative to the current definition of a biodegradable panel when using slinky pots in the IFQ/CDQ fisheries in the BSAI and GOA. Given the current scope of this action, this element would not allow vessels using slinky pots to harvest federally managed non-IFQ groundfish to use gear biodegradable twine around the door in lieu of a biodegradable panel sewn into the mesh of the pot.

Element 1: Escape Rings

Escape rings, their use, and associated benefits in pot fisheries are described in greater detail in section 5.2.2 of the EA. Federal regulations do not prohibit the use of escape rings in pot gear, and many participants use pot gear with escape rings. The addition of an escape ring is not a substitute for a biodegradable panel as required in Federal regulation. State regulations require at least two circular escape rings, with a minimum diameter of 4 inches installed on opposing vertical or sloping walls of the pot.[57] There is a Board of Fisheries proposal to reduce the minimum diameter from 4 inches to 3.75 inches.[58] At the initial review, the Council did not select an option to include escape rings as a requirement in IFQ/CDQ halibut and sablefish fisheries. However, in February 2022, the Council requested a discussion paper to analyze gear configuration requirements for pot gear.[59] As part of this discussion paper, NMFS could explore options for escape rings separate from this action.

Element 2

Element 2 would remove the buoy configuration, radar reflector, and flagpole requirements at § 679.24 but retain "LP" marking requirement. This would be implemented by simply removing these requirements from paragraph 679.24(a)(3). Marking requirements for longline pot gear used to fish sablefish IFQ in the GOA would continue to include a requirement for at least one hardball buoy marked with the capital letters "LP" on each end of the set. This would result in a clearly defined regulation which aids enforcement officers, agents, and other vessel operators in readily identifying gear types during at-sea inspections.

Element 3

Element 3 would authorize jig gear as a legal gear type for the harvest of sablefish IFQ/CDQ. In October 2021, the Council received an explanation specific to sablefish IFQ using the information paper provided to the Council in June of 2020. This paper concluded that jig gear is not an authorized gear type in the IFQ sablefish fisheries (NMFS 2020). Three conclusions were provided based on gear definitions at § 679.2 and gear restrictions at § 679.24 for each area (i.e., EGOA, CGOA, WGOA, and BSAI). While jig gear is not an authorized gear type for IFQ sablefish, it is an authorized gear type for IFQ/CDQ halibut in the GOA and BSAI. The Council then requested further analysis of jig gear as an authorized gear type in the IFQ/CDQ sablefish fisheries. This section expands the IFQ/CDQ sablefish discussion to include the applicability of the BSAI FMP, GOA FMP, sablefish TAC allocations, and how this change may be implemented in regulation.

[57] https://www.adfg.alaska.gov/static/applications/dcfnewsrelease/1029668426.pdf
[58] http://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2020-2021/proposals/221.pdf
[59] https://meetings.npfmc.org/CommentReview/DownloadFile?p=0ec25cb3-90d8-4b5c-ba4a-6c9e0a8b89f6.pdf&fileName=E%20Motion%20-%20Pot%20Gear%20Discussion%20Paper.pdf

In the BSAI[60] and GOA[61] FMPs, sablefish fisheries are categorized as *fixed gear* and managed under the IFQ Program. For the BSAI FMP fixed gear sablefish fisheries under *Definitions* at § 3.7.1, fixed gear is defined to include all HAL fishing gears (longline, **jigs,** handlines, troll gear, and pot gear). In the GOA FMP for the fixed gear sablefish fishery, legal gears for taking sablefish in the GOA at § 3.4.2 are longline gear, longline pot gear, and trawl gear. For the GOA FMP, longline gear is defined generally at § 3.4.1 as HAL, **jig**, troll, and handline. Both the BSAI FMP and GOA FMP refer to gear restrictions necessary for conservation and management at § 679. Throughout § 679, there are gear definitions and restrictions specific to sablefish for both the BSAI and GOA. Implementation of Element 3 is unlikely to require changes to the language included in the BSAI and GOA FMPs as they both defer to gear restrictions at § 679 and do not explicitly prohibit jig gear. Additionally, the BSAI FMP does not describe additional gear limitations specific to the fixed gear sablefish fishery and the GOA FMP only prohibits pot-and-line gear as an authorized gear type for sablefish which is a separate fixed gear definition from jig gear.

Under regulations at § 679, as deferred to by the FMPs, sablefish TAC is allocated based on gear type for fixed gear in the GOA subareas, HAL or pot gear in the BS and AI subareas, and trawl gear for both the GOA and BSAI subareas (50 CFR 679.20(a)(4)). For sablefish TAC in the GOA subareas, allocations are based on two categories; fixed gear and trawl gear. For sablefish harvested from any GOA reporting area, fixed gear is defined as longline gear, longline pot gear, and all pot gear (§ 679.2). Although longline gear can include jig gear (§ 679.2), it is a restricted gear type for sablefish under § 679.24(c). For sablefish TAC in the BSAI subareas, allocations are based on two categories; fixed gear (which is defined at 679.2(4)(ii) as all HAL gear and all pot gear) and trawl gear. Additionally, CDQ reserves are specific only to the BSAI subareas and gear types. As with the GOA, if a vessel operator with IFQ or CDQ uses any other gear types other than the gear types authorized for sablefish harvested from any BSAI subareas they are considered prohibited species (50 CFR 679.24(c)).

To authorize jig gear as a legal gear type for IFQ/CDQ fisheries, regulations would need to be modified for the sablefish TAC gear allocations at § 679.20(a)(4). These changes would not alter the allocation structure for sablefish TAC but modify the definition of allowable gear types for each subarea. Since the definition, *fixed gear* is already used for the EGOA, CGOA, and WGOA subareas, no changes would be required. However, since the definition, *hook-and-line or pot gear* is used for the BS and AI subareas, it is recommended that the gear allocation descriptor is changed to *fixed gear*. Additionally, under § 679.2, the definition of fixed gear for sablefish harvested from any GOA or BSAI subarea would need to be modified to include either jig or longline gear (which includes jig gear) and restrictions would need to be lifted at § 679.24(c) so that jig or longline gear is not a restricted gear for GOA and BSAI subareas and so that harvests of sablefish using jig or longline gear would not be considered prohibited species provided by § 679.21(a). Contrary to the rationale above, there is currently one location in regulations, Table 15 to § 679, that incorrectly states that jig gear is an authorized gear type for sablefish harvested from any GOA reporting area. Table 15 to Part 679 was last updated by the final rule implementing Amendment 101 to the GOA FMP (81 FR 95435, January 27, 2017). The primary purpose of this table is to define the gear codes, descriptions, and use of these gear codes for recordkeeping and reporting purposes. NMFS interprets the inclusion of jig gear in the description of authorized gear for sablefish harvested from any GOA reporting area included in Table 15 to Part 679 as an error. However, if Element 3 is recommended by the Council to authorize jig gear for sablefish IFQ and sablefish CDQ fisheries, this table would not need to be modified; however, regulations throughout § 679 would be updated.

Implementation of Element 3 to authorize the use of jig gear in the sablefish IFQ/CDQ fisheries could result in less observer data depending upon the amount of IFQ harvested with jig gear. Under current observer coverage levels at § 679 Subpart E and the Annual Deployment Plan (ADP) for observers and

[60] https://www.npfmc.org/wp-content/PDFdocuments/fmp/BSAI/BSAIfmp.pdf
[61] https://www.npfmc.org/wp-content/PDFdocuments/fmp/GOA/GOAfmp.pdf

EM in the partial coverage category, all vessels greater than 40 ft. LOA harvesting sablefish IFQ with pot or HAL gear are in either the observer or EM selection pools. Under the ADP, vessels of all sizes fishing with jig gear have been and are currently placed in the no-selection pool. Vessels in the no-selection pool are not required to log fishing trips in ODDS, nor are they required to comply with observer or EM requirements. In the ADP, since 2013, vessels of any length in the partial coverage category and exclusively fishing with jig gear have been in the no selection pool. Observer or EM coverage for vessels using jig gear could be required under a future ADP; however, observer sampling and EM data review protocols would need to be developed for this gear type.

Element 4

Element 4 would revise pot gear configuration requirements for tunnel openings for pots used to fish IFQ halibut and sablefish in the GOA and BSAI Element 4, without the option, would remove the maximum tunnel opening requirement for a vessel that begins a trip with unfished halibut IFQ onboard. The option included in the October 2021 Council Motion would remove the maximum tunnel opening requirement for vessels fishing IFQ sablefish. Paragraph (15)(ii) of the definition of Authorized fishing gear at 50 CFR § 679.2 describes the current tunnel opening requirements for pots used to fish groundfish in the federally managed fisheries. This definition does not differentiate between pots used to fish groundfish and pots used to harvest IFQ/CDQ sablefish and halibut. For implementation of Element 4, interpretation of existing and new regulations should be considered. For example, an exception to the maximum tunnel opening requirements already exists for pot gear used to harvest halibut IFQ in the BSAI. Adding yet another exception to the maximum tunnel opening requirements for pot gear used in Federal fisheries could create additional confusion for fishermen and enforcement. Upon encounter with a fishing vessel using pot gear, an enforcement officer would need to be able to determine which regulations apply (e.g., at the dock, while in transit to or from fishing grounds, as well as during fishing). When the Council provides a recommendation, they should consider how this exception will be implemented and enforced. Regardless of which option the Council selects for this element, if a vessel operator wants to move between the Pacific cod pot fishery and the sablefish IFQ or CDQ pot fisheries, the vessel could not use the same set of pot gear without modifications to comply with the different tunnel opening requirements.

If the Council recommends Element 4 without the option, an exception to the tunnel opening requirement would be added for vessels that begin a trip with unfished halibut IFQ or CDQ onboard a vessel in the BSAI or GOA.

If the Council recommends Element 4 with the option, as described in the October 2021 motion, an exception would be added for vessels that begin a fishing trip with sablefish IFQ or CDQ onboard a vessel in the BSAI or GOA. The motion language uses “targeting”, NMFS interprets this to mean--if a vessel begins a fishing trip to harvest sablefish IFQ or CDQ from any IFQ regulatory area, they would be exempt from the tunnel opening requirement. Element 4 with the option would result in a more consistent exception for fishermen and enforcement because the exception would apply to both IFQ species in all IFQ regulatory areas in the BSAI and GOA.

Element 5 and Element 6

Element 5 would revise pot limits for Western Yakutat and/or Southeast Outside to 160 pots per vessel (Suboption a), 200 pots per vessel (Suboption b), or 300 pots per vessel (Suboption c). Element 6 would revise the gear retrieval requirements to remove the requirement (Option 1) or modify the requirement to 7 days for all GOA areas (Option 2) with a suboption of 3 days in the Southeast Outside District of the GOA. For Amendment 101 to the GOA FMP, The Council considered a range of options (60 to 400 pots) for WY and SEO areas and established varying gear retrieval requirements for longline pot gear in each GOA sablefish area (81 FR 95435, December 28, 2016). During the development of Amendment 101, the

Enforcement Committee reviewed pot limits, gear retrieval, and gear specifications.[62] The Committee determined pot limits are not a means to address vessel overloading as every vessel is different and have varying capacities for gear. For final action for Element 5 and 6, if the Council determines that varying pot limits and gear retrieval requirements across areas are a means of preventing grounds preemption and gear conflicts across GOA areas, they may wish to consider how this range will be enforced. The Enforcement Committee provided law enforcement precepts intended as general guidance for the Council to assist in a rulemaking project.[63] In this guide, the committee noted that improving consistency across all areas is preferred as vessels operate across multiple regulatory areas. The committee also highlighted disadvantages to enforcing restrictions on gear deployment (i.e., soak time, hook/pot counts, etc.) because they are challenging to monitor during at-sea boardings, for vessel operators to interpret, and for enforcement officers to manage violations. For improved enforceability and compliance, the committee recommended ensuring consistency across FMPs and regulatory areas.

4.9.1.1 Additional Regulatory Considerations Recommended by NMFS

Daily Fishing Logbook (DFL) requirements for vessels less than 60 ft LOA using more than one gear type

This section includes information about a regulatory clarification that NMFS recommends to clarify logbook requirements for vessels under 60 ft LOA, which participate in the longline pot sablefish IFQ fishery. Existing recordkeeping and reporting regulations for vessels under 60 ft LOA were developed and implemented under Amendment 101 to the GOA FMP (81 FR 95435, December 28, 2016). Since implementation of Amendment 101, some vessels using pot gear in the GOA have also used H&L gear either on the same trip or on subsequent trips. NMFS has interpreted recordkeeping and reporting requirements as implemented under Amendment 101 to require these vessels to maintain a longline and pot DFL for the entire year following the first deployment of pot gear. The following description summarizes the applicability of the logbook requirements for vessels in this fishery:

- Per IPHC regulations at 20(1) vessels operating in the IFQ sablefish fishery, which are greater than or equal to 26 ft LOA are required to use one of the following logbooks: groundfish/IFQ longline and pot gear DFL; Alaska H&L logbook; ADF&G online-pot logbook; or IPHC logbook.

- Per Federal regulations at 50 CFR part 679.5(a)(4) for CVs less than 60 ft LOA, except for vessels using pot gear (as described in paragraph (c)(3)(i)(B)(1) and the vessel activity report in paragraph (k)), they are not required to comply with the reporting requirements of this section.

- Per Federal regulations at 50 CFR part 679.5(c)(3)(i)(B)(*1*) CVs less than 60 ft LOA, operating in the IFQ or CDQ sablefish fisheries and using longline pot gear in the GOA, or pot gear in the BSAI must maintain a longline and pot gear DFL.

Therefore, if a vessel is using longline pot gear to harvest IFQ/CDQ sablefish or IFQ/CDQ halibut, they are constrained to the requirement of using a DFL. If a vessel is not using longline pot gear, then they are not required to maintain a DFL.

There are active periods for different vessel types (i.e., CV using longline or pot gear) as established by 50 CFR 679.5(c)(2)(i)(A). A CV is active when gear is fishing in a reporting area, with the exception of

[62] https://meetings.npfmc.org/CommentReview/DownloadFile?p=217d70a2-8703-428e-9884-fb659b523f28.pdf&fileName=Enforcement%20Minutes%20April%202015.pdf
[63] https://www.npfmc.org/wp-content/PDFdocuments/membership/Enforcement/Enforcement_Precepts_1215.pdf

areas 300, 400, 550, or 690. If a vessel is active, they must record all pertinent information in the longline and pot gear DFL. If the vessel is inactive, they need to record periods of inactivity.

Additionally, regulations require vessels to maintain a separate DFL for longline pot gear and HAL line gear. A common practice is for vessels to record both gear types in the IPHC logbook, not in the Federal DFL because it is likely more user-friendly. ***NMFS would clarify these regulations so that vessels may record trip information for both pot and H&L gear in the same DFL on two different pages.***

Fishing effort information recorded in the Daily Fishing Logbook

NMFS recommends revisions to the recordkeeping and reporting requirements for vessels using H&L or pot gear to change how the start of gear deployment and end of gear deployment are defined in regulation. Federal regulations in 50 CFR 679.5(c)(3)(vi) state that fishermen must record the start of deployment, when the first HAL gear for a set enters the water. After a haul, the fisherman then records the end of retrieval, where the last HAL gear of a set leaves the water, regardless of where the majority of the set took place. The current regulations that specify the gear set and retrieval information to be reported in the logbook creates confusion for vessel operators and observers. This confusion can result in inconsistency in the type of spatial information reported in the DFL by different vessel operators and can reduce the usefulness of this spatial data to NMFS stock assessment authors. Oftentimes, the location for the start of where the HAL gear is misreported as the same location where the HAL gear ends. This is likely due to a vessel retrieving gear opposite from how they set it. This results in the same location being reported. There are many factors a vessel operator considers when choosing how to deploy and retrieve gear, most common are currents which change with the tides.

NMFS is in the process of conducting in-depth review of regulations that define when gear deployment and retrieval starts for hook-and-line and pot gear. This will enable the agency to better describe the information about fishing effort and fishing gear use from logbooks and either confirm the existing regulations or propose revisions. If a revision is advised, outreach and education will occur to ensure the data are usable moving forward.

4.9.2 Alternative 3

NMFS does not have management concerns for Alternative 3. This alternative would be straightforward to implement by changing the date specified at 50 CFR 679.42(e)(8)(ii) to five years after the final rule is effective.

4.9.3 Cost Recovery

Section 304(d)(2)(A) of the MSA authorizes and requires NMFS to recover the actual costs directly related to the management, data, collection, and enforcement of the IFQ Program which includes time spent on this action. NMFS implemented a cost recovery fee program for the IFQ fisheries in 2000 (65 FR 14919, March 20, 2000). IFQ fishermen pay an annual fee based on direct program costs and the ex-vessel value of fish landed under the IFQ Program. The MSA limits the fee to 3 percent of the annual ex-vessel value of the IFQ fisheries.

NMFS assesses cost recovery fees only for fish that are landed and deducted from the total allowable catch in the IFQ fisheries. NMFS publishes the IFQ standard prices and fee percentage for cost recovery for the IFQ Program for the halibut and sablefish fisheries in the Federal Register. The fee percentage for 2021 was 2.3 percent (86 FR 74071, December 29, 2021).

4.10 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 RIR and is not repeated in this section, unless the costs and benefits described elsewhere in the RIR differs between small and large entities.

The proposed action would change requirements specific to the pot gear fisheries, including new flexibilities for the configuration of the biodegradable panel, changes to the nine-inch maximum size requirement for the pot tunnel opening, elimination of requirement for buoy, flagpole, and radar reflectors on pot gear, as well as changes to gear retrieval, and pot limits. The proposed action would also authorize jig gear as a legal gear type for harvesting sablefish IFQ/CDQ. Lastly, the proposed action would temporarily remove the Adak community quota entity (CQE) residency requirement for five years.

Identification of Directly Regulated Entities

Entities that may be directly regulated by this action include those that use pot or jig gear to commercially harvest sablefish or halibut IFQ in the GOA and BSAI, or sablefish or halibut CDQ in the BSAI (depending on each element of the action). In addition, this action may directly regulate those that commercially harvest sablefish or halibut IFQ derived from QS held by the Adak CQE. Other IFQ fishermen (those using HAL gear) could be impacted by gear conflicts and grounds preemption issues under Alternative 2, but this alternative would not modify regulations that directly apply to HAL fishermen.

For 2020, 773 vessels participated in the GOA or BSAI IFQ or CDQ fixed gear halibut/sablefish fisheries. This estimate is based on the number of vessels in these fisheries, as there is no way to estimate revenue on a QS holder basis.

Count of Small, Directly Regulated Entities

Under the RFA, businesses that are classified as primarily engaged in commercial fishing are considered small entities if they have combined annual gross receipts not in excess of $11.0 million for all affiliated operations worldwide, regardless of the type of fishing operation (81 FR 4469; January 26, 2016). If a vessel has a known affiliation with other vessels – through a business ownership or through a cooperative – these thresholds are measured against the small entity threshold based on the total gross revenues of all affiliated vessels.

Using the $11.0 million threshold and total gross revenue for 2020, 752 of the 773 vessels were small entities. This estimate is based on vessels that participated in IFQ or CDQ fixed gear halibut/sablefish fisheries (in 2020). There is no way to estimate revenue on a QS holder basis. Some individuals/ businesses will consolidate their halibut or sablefish quota onto one vessel to share in the variable costs associated with the trip. In this way, this estimate may underestimate the number of individuals or businesses that participate in these fisheries.

Impacts to Small, Directly Regulated Entities

The alternatives are described and analyzed in the RIR and EA. Based upon the best available scientific data, and consideration of the objectives of this action, it appears that there are no alternatives to the proposed action that have the potential to accomplish the stated objectives of the Magnuson-Stevens Act and any other applicable statutes and that have the potential to minimize any significant adverse economic impact of the proposed rule on small entities. The action alternatives allow increased flexibility for these harvesters, none of the alternatives restrict the directly regulated fishery participants beyond the status quo. This action is not expected to have more than a *de minimus* effect on the recordkeeping and reporting requirements of small entities participating in the pot and jig IFQ fisheries.

4.11 Summation of the Alternatives with Respect to Net Benefit to the Nation

This section will be completed when the Council selects a preferred alternative.

5 Environmental Assessment

There are four required components for an environmental assessment. The need for the proposal is described in Section 1, and the alternatives in Section 2. This chapter addresses the probable environmental impacts of the proposed action and alternatives. A list of agencies and persons consulted is included in Section 7.

This chapter evaluates the impacts of the alternatives and options on the various resource components. The socio-economic impacts of this action are described in detail in the Regulatory Impact Review (RIR) of this analysis (Section 3).

Recent and relevant information, necessary to understand the affected environment for each resource component, is summarized in the relevant section. For each resource component, the analysis identifies the potential impacts of each alternative, and uses criteria to evaluate the significance of these impacts. If significant impacts are likely to occur, preparation of an EIS is required. Although an EA should evaluate economic and socioeconomic 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 (see 40 CFR 1502.16).

When determining whether an action significantly affects environmental quality, an EA should consider:

"the impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Such impacts can result from individually minor but collectively significant actions taking place over a period of time".

The effects analysis should capture the total effects of many actions over time that would be missed if evaluating each action individually. Concurrently, the Council on Environmental Quality (CEQ) guidelines recognize that it is most practical to focus the effects analysis on only those effects that are truly meaningful.

5.1 Methods

5.1.1 Documents Incorporated by Reference in this Analysis

This EA 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 on the human environment and are referenced in the analysis of impacts throughout this chapter.

Alaska Groundfish Harvest Specifications Final Environmental Impact Statement (NMFS 2007).

This EIS provides decision makers and the public an evaluation of the environmental, social, and economic effects of alternative harvest strategies for the federally-managed groundfish fisheries in the GOA and the Bering Sea and Aleutian Islands management areas and is referenced here for an understanding of the groundfish fishery. The EIS examines alternative harvest strategies that comply with Federal regulations, the Fishery Management Plan (FMP) for Groundfish of the GOA, the Fishery Management Plan (FMP) for Groundfish of the BSAI Management Area, and the Magnuson-Stevens Fishery Conservation and Management Act. These strategies are applied using the best available scientific information to derive the total allowable catch (TAC) estimates for the groundfish fisheries. The EIS evaluates the effects of different alternatives on target species, non-specified species, forage species, prohibited species, marine mammals, seabirds, essential fish habitat, ecosystem relationships, and

economic aspects of the groundfish fisheries. This document is available from https://www.fisheries.noaa.gov/resource/document/alaska-groundfish-harvest-specifications-environmental-impact-statement-eis.

Alaska Groundfish Harvest Specifications Final Environmental Impact Statement Supplemental Information Report (NMFS 2019). Provides information on the effects of the groundfish fisheries on marine mammals and updates NMFS 2007. Available from https://alaskafisheries.noaa.gov/sites/default/files/sir-pseis0219.pdf.

Stock Assessment and Fishery Evaluation (SAFE) Report for the Groundfish Resources of the BSAI and GOA (NPFMC 2021c).

Annual SAFE reports review recent research and provide estimates of the biomass of each species and other biological parameters. The SAFE report includes the acceptable biological catch (ABC) specifications used by NMFS in the annual harvest specifications. The SAFE report also summarizes available information on the ecosystems and the economic condition of the groundfish fisheries off Alaska. This analysis relies heavily on information from the Sablefish SAFE, available from https://apps-afsc.fisheries.noaa.gov/refm/docs/2021/sablefish.pdf. The additional SAFE reports are available from https://www.fisheries.noaa.gov/alaska/population-assessments/north-pacific-groundfish-stock-assessments-and-fishery-evaluation.

Final Programmatic Supplemental Environmental Impact Statement (PSEIS) on the Alaska Groundfish Fisheries (NMFS 2004).

The PSEIS evaluates the Alaska groundfish fisheries management program as a whole and includes analysis of alternative management strategies for the GOA and Bering Sea/Aleutian Islands (BSAI) groundfish fisheries. The EIS is a comprehensive evaluation of the status of the environmental components and the effects of these components on target species, non-specified species, forage species, prohibited species, marine mammals, seabirds, essential fish habitat, ecosystem relationships, and economic aspects of the groundfish fisheries. A Supplemental Information Report (NPFMC and NMFS 2015) was prepared in 2015 which considers new information and affirms that new information does not indicate that there is now a significant impact from the groundfish fisheries where the 2004 PSEIS concluded that the impact was insignificant. These documents are available from https://www.fisheries.noaa.gov/resource/document/alaska-groundfish-fisheries-programmatic-supplemental-environmental-impact.

Environmental Assessment/Regulatory Impact Review for Amendment 101 to the FMP for Groundfish of the GOA: Allow the use of pot longline gear in the GOA sablefish IFQ fishery (NMFS 2015).

The Amendment 101 EA analyzed proposed management measures that would allow a new gear type to harvest sablefish in the GOA. The Amendment 101 summarizes the evaluations rendered for fisheries, marine resources, and ecosystem components and is referenced in this EA. This document is available from: https://www.fisheries.noaa.gov/action/amendment-101-fmp-groundfish-gulf-alaska-management-area

Review of Gulf of Alaska Groundfish Fishery Management Plan Amendment 101 to Allow Pot Longline Gear in the Sablefish IFQ Fishery (NPFMC 2021).

This document reviewed the first 3-4 years of fishery data from the GOA sablefish pot fishery. This document is available from https://meetings.npfmc.org/CommentReview/DownloadFile?p=1cee7277-52dc-405c-887b-c28d9d62ab92.pdf&fileName=D1%20GOA%20Sablefish%20Pots%20Report.pdf

Environmental Assessment/Regulatory Impact Review for Amendment 118 to the FMP for Groundfish of the BSAI: Retention of Halibut in Pot Gear (NPFMC 2019).

This document analyzed proposed management measures under BSAI Amendment 118 to authorize the retention of legal-size halibut in pot gear in the BSAI, provided the operator holds sufficient halibut IFQ or CDQ for that IFQ regulatory area. This document is available from https://www.fisheries.noaa.gov/resource/document/final-ea-rir-proposed-amendment-118-fishery-management-plan-groundfish-bering-sea

Summary of data, stock assessment, and harvest decision table for Pacific Halibut (*Hippoglossus stenolepis*) at the end of 2021. IPHC- 2021- IM97-10 Rev_1. November 23, 2021. Seattle, WA. (Stewart et al. 2021)

This document provides an overview of the final data sources available for the 2021 Pacific halibut stock assessment including the population trends and distribution among IPHC Regulatory Areas based on the modelled IPHC fishery-independent setline survey (FISS), directed commercial fishery data, and results of the stock assessment. This document is available from: https://iphc.int/uploads/pdf/im/im097/iphc-2021-im097-10.pdf

5.1.2 Analytical Method

Table 5-1 shows the components of the human environment and whether the proposed action and its alternatives have the potential to impact that resource component and thus require further analysis. If there is a potential the proposed action may have an effect on the components of the human environment, that effect is examined more thoroughly in the corresponding section. Extensive environmental analysis on all resource components is not needed in this document, because the proposed action is not anticipated to have environmental impacts on all resource components. Additionally, not all elements of the proposed action are anticipated to result in environmental impacts.

Table 5-1 Resources potentially affected by the proposed action and alternatives.

	Potentially affected resource component							
	Sablefish	**Halibut**	**Incidental Catch**	**Marine Mammals**	**Seabirds**	**Habitat**	**Ecosystem**	**Social and economic**
Alt 2	Y	Y	Y	Y	N	N	N	Y
Alt 3	N	N	N	N	N	N	N	Y

The effects of the action alternative on the resource components would be caused by the following:

- any change in gear design (e.g., the biodegradable panel) that alters the ability of organisms to escape from pots that are lost and result in ghostfishing;
- changes in effort (i.e., amount of gear (the number of pots used, number of fishing lines in the water column), time on the ground) to harvest target species;
- changes in catch composition and size selectivity of gear; and
- The socioeconomic environment may be affected by increased operational efficiency in harvesting halibut and sablefish IFQ (e.g., catch per unit effort, less time required to catch quota) if any of the flexibilities afforded through this action are utilized. Socioeconomic impacts are further discussed in the RIR (Section 4).

The extent of impacts depends on the magnitude of any additional shift in effort as a result of this action, in addition to the impacts of gear modifications. Shifts in effort could mean amount of catch with pot gear, the number of vessels shifting gear types, or the extent to which the fishery changes (e.g., designing new pot gear for targeting halibut and moving to new fishing grounds versus retaining halibut incidentally in the existing sablefish fishery). **However, the impacts of vessels switching from HAL to pot gear were already analyzed in previous documents (NPFMC 2016; NPFMC 2019).** Sections 3 and 4.7 describe the analytical approach and expected magnitude of change under the proposed action. It is difficult to accurately estimate the specific number of vessel operators that would switch to pot gear from HAL gear as a direct result of this action, however, as noted in the previous sections, it is likely to be minimal. Whale depredation is increasing for HAL fishermen, which would be a reasonable justification for switching to pot gear to target halibut, however, this is allowed under the status quo. This minimal expected magnitude of effort shifting from the HAL to pot gear in the IFQ fisheries, combined with the impacts of gear modifications, framed the analysis of environmental impacts for this action.

Alternative 2 has the potential to affect sablefish, halibut, incidental catch, marine mammals, and social/economic components. Descriptions of Elements 1 and 4 of Alternative 2 are included in Sections 5.2.1 and 5.2.2 , respectively. The background included in those sections provides the necessary information to understand the impacts of each of those elements on resource components. Section 4.7.5 provides background on Elements 5 and 6 with which environmental effects of these elements are analyzed in the EA. Effects of Element 1, the biodegradable panel, are included within Section 5.2.1 and are not repeated in each resource component section, as environmental impacts as a result of this element are uncertain but likely to be similar across the potentially affected resource components. The status of each resource component and the effects of the rest of the elements specific to each resource component are then included in the appropriate sections following (ex: Section 5.3.1.1 for status of halibut stock, Section 5.3.3 for effects specific to halibut).

Element 2, which is proposed to revise the buoy and flagpole requirements on pot gear used to fish IFQ in the GOA, is not expected to have significant impacts on resource components other than social/economic, which are analyzed in Section 4.7.2 of the RIR. Environmental impacts related to Element 2 would be dependent upon significant changes in the number of fishing lines in the water, and due to the way in which buoys are marked and configured, the number of lines in the water would not be significantly changed by inclusion of this element. Therefore, there are no expected environmental impacts of Element 2 across resource components.

Beneficial, but deminimus impacts are expected on seabirds under Alternative 2. The proposed action would not significantly change when or where the fishery operates, and current seabird avoidance measures and seabird breeding areas described in previous documents (above) would not be changed by Alternative 2. USFWS 2003 and USFWS 2015 determined that groundfish fishing activities by vessels using pot gear are not likely to adversely affect the short-tailed albatross and Steller's eider. While Alternative 2 could allow a newly authorized gear type for the harvest of IFQ sablefish under Element 3 (jig gear), this gear type is already used for halibut and other groundfish such as cod in the action areas and has a limited impact on non-target species. The effects of this gear on seabirds have been assessed in NMFS 2004 and jig gear is known as a relatively clean gear type. Additionally, while Alternative 2 could allow more pots on the grounds (under Element 5) and pot gear to be on the grounds in the GOA for a longer period of time (Element 6), previous documents have already analyzed the effects of pot gear on seabirds. As analyzed in NPFMC (2016), any shift in effort from HAL gear to pot gear that occurs from this action would potentially have beneficial, but deminimus impacts on seabirds compared to the status quo, due to the differences in seabird bycatch occurrences by the gear types.

Effects of the action on habitat are expected to be deminimus because none of the alternatives would significantly change when or where the fishery operates, and impacts of existing gear types on habitat have been analyzed. The Groundfish PSEIS (NMFS 2004) contains a discussion of the effects of fishing,

including pot and jig, gear on habitat. The effects of current fishing regulations on habitat have been described in previous documents (Section 5.1.1). The 2005 EFH FEIS, 2010 EFH Review, and 2015 EFH Review concluded that current fishery regulations do not have long-term effects on habitat, and any expected impacts are determined to be minimal and not detrimental to fish populations or their habitats (NMFS 2017).

Neither of the alternatives would change current EFH conservation and protection measures including restrictions or prohibiting bottom contact gears.[64] IFQ is assigned to a specific regulatory area in which it must be fished and may be fished only within set fishing seasons. Any change in effort in the pot fishery is likely to be minimal (as described in Section 4.7) and impacts on habitat due to potential changes in effort are likely to be incremental but the full extent of impacts is unknown. Any increase in pot fishing is not likely to disturb deep sea corals or sponges, particularly due to the low concentrations of deep-sea corals (Goddard et al. 2016; MacLean, Rooper & Sigler 2017).

EFH provisions in FMPs must be reviewed every 5 years and revised, if necessary (NMFS AKR 2005). The most recent year that an EFH Review was completed was in 2017 (NMFS 2017). No effects more than minimal or not temporary were found for Essential Fish Habitat (EFH) from commercial fishing activity on species in the BSAI or GOA (NMFS 2017). Pot and longline gears tend to have the least effect on habitat due to the smaller footprint of the gears.[65] The jig fisheries have no direct contact with the seafloor, although contact may occur incidentally (cite). Any changes in fishing effort may lead to incremental but unknown effects on EFH or habitat, however, given the minimal increase in pot gear effort expected from this action and the best available information, it is unlikely that this action would have significant impacts on EFH beyond the status quo.

Furthermore, the likely effects on coral from HAL and longline pot gear are reported to be similar, although no side-by-side comparisons have been done (NPFMC 2016). Most sablefish and halibut IFQ fishermen are knowledgeable of the location of coral areas and strive to minimize gear damage/loss and increase their catch. None of the alternatives, including the preferred alternative, would change TAC amounts, methods, seasons, or areas closed to trawling.

No significant effects are presumed for other ecosystem components because current or proposed fishing regulations, harvest limits, and habitat protections as described in previous NEPA documents (in Section 5.1.1) would not be changed by either of the alternatives.

Additionally, no effects are expected on resource components other than social/economic under Alternative 3. No effect is presumed for these components because the proposed action under Alternative 3 would not significantly change when or where the fishery operates. IFQ is assigned to a specific regulatory area in which it must be fished. Additionally, current fishing regulations (e.g., season and gear types), harvest limits, and regulations protecting habitat and important breeding areas as described in previous NEPA documents (above) would not be changed by Alternative 3. Alternative 3 would not change the methods, seasons, closed areas, nor the overall amount of harvest allowed. As a result, further analysis is included only for social and economic components under Alternative 3. These social and economic components are analyzed in the RIR (Section 4.8).

This EA analyzes the potentially affected environment and the degree of each of the effects of each alternative and the effects of past, present, and reasonably foreseeable future actions (RFFA). Based on Table 5-1, the resources with potentially meaningful effects are sablefish, halibut, incidental catch, marine mammals, and social/economic components. The effects on the other resources have been analyzed in numerous documents and the impacts of the proposed action alternatives on those resources is minimal,

[64] The use of bottom contact gear is prohibited in the Gulf of Alaska Coral and Alaska Seamount Habitat Protection Areas year-round.
[65] Personal communication with John Olson, NMFS Habitat Conservation Division.

therefore there is no need to conduct an additional impacts analysis for those resources on the effects of past, present, and RFFA.

Each section below provides a review of the relevant past, present, and RFFA that may result in reasonably foreseeable future effects on the resource components analyzed in this document. A complete review of the past, present, and RFFAs are described in the prior NEPA documents incorporated by reference and the supplemental information report (SIR) NMFS prepares to annually review of 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, including present and reasonably foreseeable future actions. NMFS reviews the reasonably foreseeable future actions described in the Harvest Specifications EIS each year to determine whether they occurred and, if they did occur, whether they would change the analysis in the Harvest Specifications EIS of the impacts of the harvest strategy on the human environment. In addition, NMFS considered whether other actions not anticipated in the Harvest Specifications EIS occurred that have a bearing on the harvest strategy or its impacts. The SIRs provide the latest review of new information regarding Alaska groundfish fisheries management and the marine environment since the development of the Harvest Specifications EIS and provide reasonably foreseeable future effects information applicable to the alternatives analyzed in this EA.

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). CEQ regulations require 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. In addition to these actions, this analysis includes the effects of climate change.

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 Effects Analysis of Select Alternative 2 Elements

5.2.1 Slinky Pots and Biodegradable Escape Panel (Element 1)

Alternative 2, Element 1 proposes that regulations be revised to allow the use of biodegradable twine in the door latch or pot tunnel. Section 4.7.1 includes a description of the proposed element, context of the issue, and potential socioeconomic impacts.

A concern noted in the GOA Sablefish Pots review (NPFMC 2021) surrounding this type of pot gear and the biodegradable latch method (shown in Figure 4-11 and Figure 4-12) was that slinky pots are configured differently from traditional square pots and it was uncertain whether the door will actually fall open (which would depend on how the pot lands on the seafloor). However, these pots roll and move along the seafloor in such a way that it is unlikely that the door would be blocked for any significant period of time.[66] Therefore, scientists at AFSC responded that the issue is less about how the pot lands on the seafloor and more about the method used to tie the door shut, and ensuring that a latch or panel would break in such a way that fish and other organisms could escape.[67] It has been noted that as designed, if the

[66] personal communication, J. Sullivan, AFSC ABL, August 2021
[67] Ibid.

twine holding the door shut does break, the opening created by the door is much larger than the opening created by the twine/panel shown in Figure 4-13, allowing trapped organisms to escape with more ease than through a smaller opening.

Ghost fishing occurs when gear is lost or abandoned due to weather, tides, gear malfunctions, abandonment, or other factors and continues to trap marine organisms without direct human influence (Bullimore et al 2001). The relative scale of direct population-level impacts to the target organisms depends on the frequency of gear loss, duration of ghost fishing (escape mechanisms), and the potential for 'perpetual baiting via the ongoing cycle of capture, decay and attraction' (Uhlmann et al. 2015). Ghostfishing can occur for several years after a pot is lost due to the durability of manufactured gear. **However, current regulations require a biodegradable panel which may reduce the potential for ghostfishing by providing a time-release mechanism for escapement. The efficacy of this escapement mechanism is not well understood.** To date, the only comprehensive study on No. 30 untreated cotton twine in pot fisheries was conducted on the Aleutian Islands Golden King Crab fishery (see ADF&G 2008). The study found that No. 30 cotton twine has a mean time for failure of 44 days when used in similar conditions to fish for crab (ADF&G 2008). The escape mechanism requirement for shellfish and bottomfish (groundfish) pots in AK State fisheries is similar to the current Federal regulation for groundfish pots: a sidewall, which may include the tunnel, of all shellfish and bottomfish pots must contain an opening equal to or exceeding 18 inches in length (5 AAC 39.145). The effectiveness of biodegradable panels currently required in regulation on reducing ghostfishing impacts are relatively unknown, therefore, the analysts provide a qualitative description of potential impacts in relation to the unknown status quo impact.

Under the status quo, if pots are lost, then they have the potential to ghostfish (Matsuoka et al. 2005). If fish are unable to escape (i.e. if the biodegradable panel fails to release or does not release in time for an organism to survive), they are assumed to have 100% mortality (Bullimore et al. 2001). Any changes in the biodegradable panel that would increase the likelihood that organisms in the pot cannot escape would increase the magnitude of the impact on populations of any organisms caught in the pot. Any impacts of Element 1 would be experienced across resource components, specifically target and non-target species, as it is uncertain which organisms would be subject to ghostfishing. If the biodegradable twine were tied in such a way that it would maintain the same breaking strength as the biodegradable panels tied into the mesh of other pots (status quo), impacts to resource components are expected to be minimal as compared with the status quo. **Scientists at AFSC have recommended that for optimal performance, there should only be two knots (one at each end of the <= 30 count untreated cotton twine) and the lacing should not overlap in any area (only single wraps, no double wraps).** [68]

As with the status quo, impacts of Element 1 depend on factors such as the number of lost pots and the rate at which the No. 30 cotton twine degrades (otherwise the pot would be ghostfishing). Table 5-2 includes a summary of the Prior Notice of Landing (PNOL) data for number of pots set and pots lost from 2017 to 2021 in the BSAI and GOA.[69] This could be used as a maximum number of pots that *could* have been ghostfishing during this time *if the biodegradable panels failed to release*. In the GOA between 2017 and 2021, 2,741 pots were reported as lost on the PNOL. In the BSAI between 2017 and 2021, 417 pots were reported as lost on the PNOL. Across both the BSAI and GOA, 2018 saw the highest proportion of pots lost relative to pots set.

[68] Personal communication, J. Sullivan, August 2021.
[69] Vessel operators using longline pot gear in the GOA IFQ sablefish fishery must maintain logbooks and use VMS. Operators must also self-report on the Prior Notice of Landing (PNOL) the number of pots deployed (pots set), the number of pots lost (if applicable), and the number of pots left deployed on the fishing grounds after a landing is reported (pots soaking). When a vessel submits their PNOL, they are required to identify the IFQ regulatory area(s) in which the IFQ sablefish was harvested (50 CFR 679.5(l)(1(iii)(F)).

Table 5-2 Summary of pots lost by year and area as reported on the PNOL. % pots lost is a proportion of the number of pots lost to the number of pots set.

GOA			
Year	# pots set	# pots lost	% pots lost
2017	37,190	167	0.45
2018	40,353	297	0.74
2019	55,122	267	0.48
2020	165,395	705	0.43
2021	234,710	1,305	0.56
BSAI			
2017	25,637	59	0.23
2018	28,616	114	0.40
2019	17,123	34	0.20
2020	19,119	51	0.27
2021	46,705	159	0.34

SOURCE: NFMS AKR IFQ prior notice of landing data, NMFS AKR IFQ landing data, NMFS AKR IFQ permit data. Accessed 2/2/2022.

Because the motion only applies to IFQ, the regulatory change would add a paragraph to the existing definition of pot gear that would allow the door latch to be used as an acceptable alternative for a biodegradable panel when using slinky pots. The magnitude of any population-level impacts would depend upon the number of pots that use this method, and whether this method reduces ghost fishing to the same extent as the current biodegradable panel. Currently, there is no way to distinguish the number of slinky pots being deployed in the IFQ fisheries; further discussion of monitoring and reporting related to slinky pots is included in Section 4.9. Furthermore, the addition of escape rings (described in Section 5.2.2) on pots may alleviate some of the impacts of ghost fishing for organisms that are small enough to fit through the rings. Table 5-2 indicates that as more pots are deployed, more are lost, though fewer than 1% deployed are lost each year. Escape rings reduce catch rates of small fish while maintaining catch rate of larger fish. Escape rings are currently not required by regulation on pots used in the IFQ fisheries, though they are often used by participants.

For the reasons mentioned above, the effects of Element 1 on target and nontarget species are not directly quantifiable but are expected to be minimal or within a comparable range as is assumed under the status quo alternative. Given that Element 1 proposes a larger escape panel than what is currently required, it is possible that impacts to resource components may actually be reduced under this alternative. Ultimately, the impacts of ghost fishing will depend on the rates of lost gear, coupled with the efficacy of the escape panel. Although limited research exists to quantify impacts under the status quo or Element 1 alternatives, studies have shown that proper installation (e.g. not double-wrapping the panel's binding material or

using multiple knots) and the use of the correct binding material (<= 30 count untreated cotton twine) are significant predictors for escape panel success.[70,71]

5.2.2 Tunnel Opening (Element 4)

Element 4 would remove the requirement for a nine-inch maximum width of tunnel opening in the GOA. Section 2.1 explains that certain vessels in the BSAI are exempt from this requirement. As described in Section 4.7.4, removing this requirement in the GOA would allow fishermen to target halibut (and potentially larger sablefish, under the option) more effectively. It is unclear whether all vessels in the GOA IFQ pot fishery will use this flexibility. Some vessels may choose to keep the nine-inch tunnel opening depending on the size catch they are targeting, in which case we would not expect to see much change from the status quo in terms of catch composition.

Regulations in the BSAI and GOA already allow retention of halibut in pots (81 FR 95435; 85 FR 840). In the BSAI, halibut quota holders can already use pot gear on a trip solely intended to harvest halibut, or on a mixed trip in which both halibut and sablefish are the intended target, provided the vessel has IFQ for the appropriate areas for both species. Based on Federal regulations at Section 679.7(f)(11), IFQ permit holders are prohibited from discarding halibut or sablefish caught with fixed gear for which they hold halibut or sablefish IFQ. Under Alternative 2, those who are fishing sablefish or halibut with pot gear would continue to be required to retain legal-size halibut for which they have the necessary IFQ. Sections 2.2, 3, and 4.7.4 of the document describe the ways Element 4 may be interpreted, which is necessary in discussion of the potential magnitude of impacts.

It is unclear what size tunnel opening harvesters would use, especially given the variety of pot sizes used in the fishery. A significantly larger tunnel opening at some point requires larger pots, and there is likely a limit on how large a pot can be before it is no longer efficient to be fished.

A change in the size of the tunnel opening (Element 4) could affect catch composition, both in terms of size selectivity of the target catch (Section 5.3.3.2) and the amount and size of incidental catch (Section 5.4.2.2). Quantitative data on the size and species of fish that get harvested with different sizes of tunnel opening are not available, because there is no systematic data collection that distinguishes pots fished with different tunnel sizes. Therefore, the analysts provide a qualitative discussion on the potential impacts of changing tunnel size on target and incidental catch.

Escape rings, or metal rings secured to a pot's external mesh, offer a highly effective strategy to avoid small fish when pot fishing (Haist et al. 2000; Haist and Hilborn 2000). Escape mechanisms are broadly used in pot/trap fisheries due to their efficacy in reducing bycatch and incidental catch of unmarketable size classes. A recent study in Chatham Strait, Alaska compared 3.5", 3.75", and 4" escape rings using conventional pot gear and found 3.5" escape rings effectively reduced catch rates of small fish, while maintaining catch rates of large fish (Figure 5-1). The 3.75" and 4" rings further reduced catch rates of small fish but at the cost of a detectable reduction in catch rates of larger fish. Escape rings could allow certain sized organisms to escape, ultimately reducing the magnitude of potential impacts on incidental catch.

[70] Araya-Schmidt, T. and Queirolo, D., 2019. Breaking strength evaluation of biodegradable twines to reduce ghost fishing in the pot and trap fisheries of Chile. Latin American Journal of Aquatic Research, 47(1), pp.201-205.
[71] J. R. Scarsbrook, G. A. McFarlane & W. Shaw (1988) Effectiveness of Experimental Escape Mechanisms in Sablefish Traps, North American Journal of Fisheries Management, 8:2, 158-161.

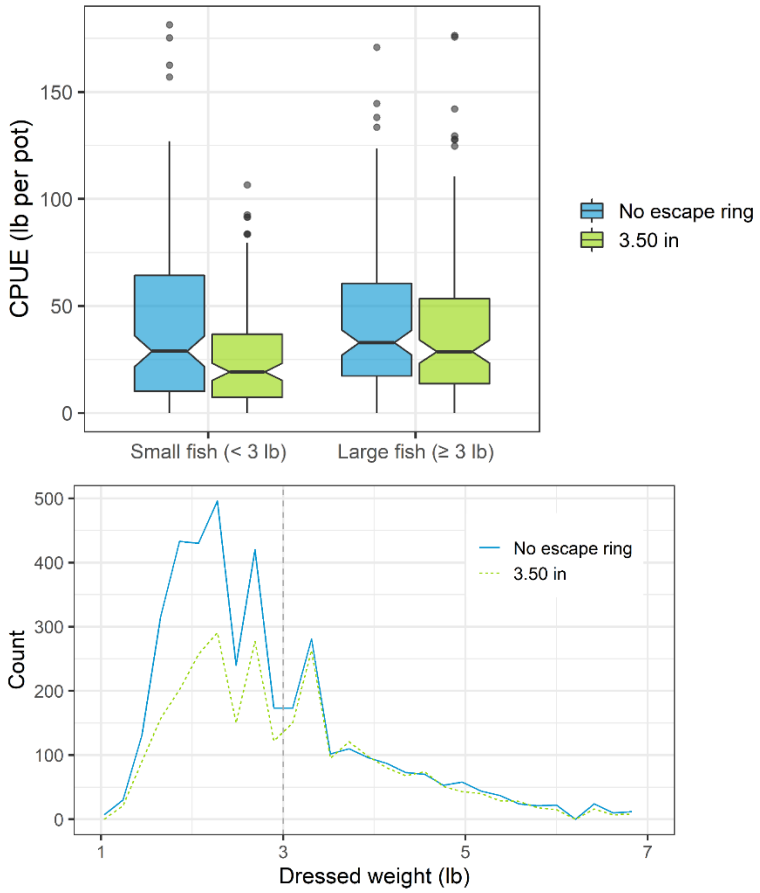


Figure 5-1 Catch per unit effort (CPUE; total dressed lb per pot) of all sizes of sablefish combined, small sablefish (< 3 dressed lb), and large sablefish (>= 3 dressed lb) by escape ring treatment in May 2019, Chatham Strait, Alaska. The data are presented as notched boxplots; if the notches are not overlapping, it means the medians (50th percentile) between groups are significantly different. The Eastern cut dressed weight product recovery rate was assumed to be 0.63. Data courtesy of the Alaska Department of Fish and Game.

5.3 Target Species

Due to the nature of the IFQ fisheries and for the purposes of this analysis, halibut and sablefish are both considered target species. The status of and impacts to these stocks are included in the follow sections.

5.3.1 Halibut

Pacific halibut (*Hippoglossus stenolepsis*) is one of the largest species of flatfish in the world, with individuals growing up to eight feet in length and over 500 lb. The range of Pacific halibut that the IPHC manages covers the continental shelf from northern California to the Aleutian Islands and throughout the Bering Sea. Pacific halibut are also found along the western north Pacific continental shelf of Russia, Japan, and Korea. The depth range for halibut is up to 250 fathoms (457 m) for most of the year and up to 500 fathoms (914 m) during the winter spawning months. Halibut also move seasonally between shallow waters and deep waters. Mature fish move to deeper offshore areas in the fall to spawn and return to nearshore feeding areas in early summer.

Halibut feed on plankton during their first year of life. Young halibut (1 to 3 years old) feed on euphausiids (small shrimp-like crustaceans) and small fish. As halibut grow, fish make up a larger part of their diet. Larger halibut eat other fish, such as herring, sand lance, capelin, smelt, pollock, sablefish, cod, and rockfish. They also consume octopus, crabs, and clams.

Halibut also move seasonally between shallow waters and deep waters. Mature fish move to deeper offshore areas in the fall to spawn and return to nearshore feeding areas in early summer. It is not yet clear if fish return to the same areas to spawn or feed, year after year.

5.3.1.1 Status of the Stock

The IPHC assesses the coastwide biomass of halibut, including fish that are accessible in the IPHC setline survey and to the directed halibut fisheries (generally fish over 26 inches; O26). The IPHC estimates the distribution of the coastwide stock based on survey catch rate among IPHC management areas using information from its annual setline survey. Because the IPHC setline survey does not extend throughout the Bering Sea, IPHC staff use the eastern Bering Sea trawl and other surveys to extrapolate the IPHC setline results across Area 4CDE. Pacific halibut is modeled as a single stock extending from northern California to the Aleutian Islands and Bering Sea, including all inside waters of the Strait of Georgia and the Salish Sea, but excludes known extremities in the western Bering Sea within the Russian Exclusive Economic Zone.

The IPHC uses an ensemble approach to its coastwide stock assessment for the Pacific halibut stock, described in its assessment (Stewart et al. 2021). The IPHC stock assessment model attempts to capture the trends in the stock, supply useful management advice, and characterize an appropriate level of uncertainty. The ensemble is composed of coastwide models, which means that the annual estimated biomass is a single value for the entire coast (U.S. and Canada) and migration between areas is not modeled. Natural mortality is estimated in some models and fixed for one sex in others. Each of the models use annual empirical weight-at-age observations to convert numbers-at-age to biomass. This allows the model to account for the observed large changes in historical weight-at-age. Ensemble modeling provides a more robust assessment approach that acknowledges structural uncertainty and that, along with other recent improvements, has effectively stabilized management decision tables relative to catch recommendations and potential impacts on spawning biomass (in probabilistic terms).

Trends in the Pacific halibut spawning biomass can be seen in the ensemble model in Figure 5-2. The estimated spawning stock biomass has been stable since 2012 following a considerable decline since the late 1990s (Stewart et al. 2021). That trend is estimated to have been largely a result of decreasing size-at-age, as well as somewhat weaker recruitment strengths than those observed during the 1980s. The spawning biomass is estimated to have increased gradually to 2016, and then decreased to an estimated 191 million pounds (~86,600 t) at the beginning of 2022, with an approximate 95% credible interval ranging from 129 to 277 million pounds (~58,700-125,400 t; Stewart et al. 2021). Figure 5-2 also demonstrates a three-year stock projection assuming a level of mortality projected from the IPHC current interim Spawning Potential Ratio (SPR)-based harvest policy of $F_{SPR=43\%}$ (the level of fishing that would reduce the lifetime spawning output per recruit to 43% of the unfished level). Projections indicate that mortality consistent with the interim management procedure reference fishing intensity (F43%) is likely to result in further declining biomass levels in the near future.

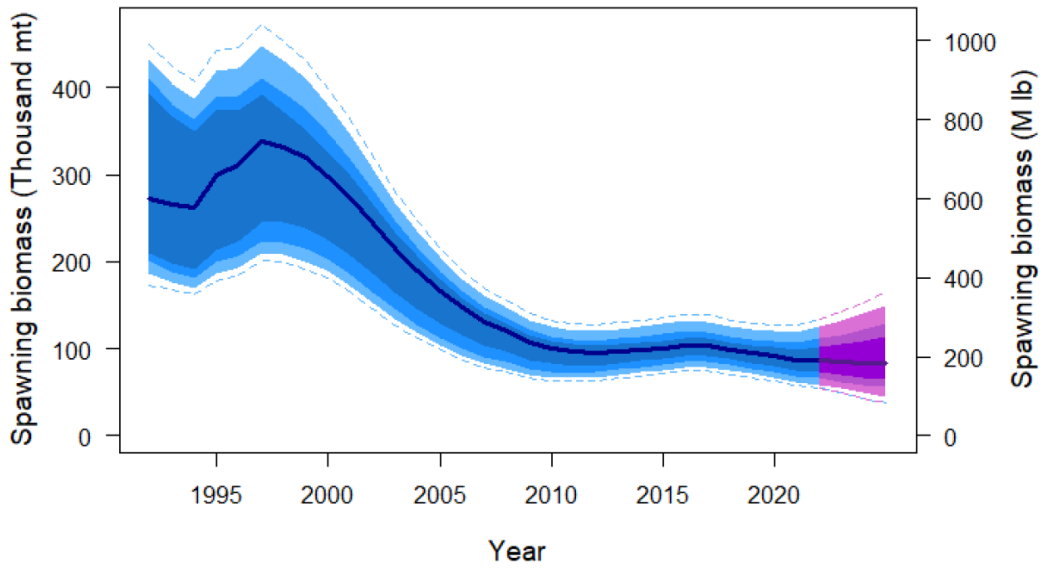


Figure 5-2 Stock three-year projections using the integrated results from the stock assessment ensemble and the Total Constant Exploitation Yield (TCEY) projected at the reference level (41.2 Mlb TCEY). Source: Reproduced from presentation of Agenda item 5.4 IPHC-2021-IM097-10 Rev_1

Since 2014, there is no information to suggest that halibut is subject to "overfishing," as that term is commonly applied to stocks managed under the Magnuson-Stevens Act. The Halibut Act does not define "overfishing" or require that an overfishing limit be defined. However, the halibut stock is currently managed in a manner that is not likely to result in a chronic long-term decline in the halibut resource coastwide due to fishing mortality from all sources of removals. At the beginning of 2022 female spawning biomass was estimated to be 191 million pounds (86,600 t), which corresponds to a 45% chance of being below the IPHC trigger reference point of SB30%, and less than a 1% chance of being below the IPHC limit reference point of SB20%. The stock is estimated to have declined by 17% since 2016 but is currently at 33% of the unfished state. Therefore, the stock is considered to be 'not overfished' (Stewart et al. 2021). For more information on the status of the halibut stock, uncertainties in the assessment, and additional factors that may impact the overall stock status and harvestable surplus of abundance of halibut see Stewart et al. 2021.

5.3.2 Sablefish

5.3.2.1 Status of the Stock

BSAI and GOA sablefish are managed as one population in Federal waters due to their highly migratory behavior during certain life history stages. The sablefish stock is assessed annually in the SAFE report (Goethel et al. 2021) and was also evaluated in the Alaska Groundfish Fisheries Harvest Specifications EIS (NMFS 2007a). The sablefish assessment is based on a statistical sex-specific age-structured model. This model incorporates fishery data and fishery independent data from domestic (AFSC longline survey, GOA trawl survey) and Japan-US cooperative longline surveys.

Sablefish (*Anoplopoma fimbria*) are managed under Tier 3 of NPFMC harvest rules. Reference points are calculated using the mean size of the 1977 – 2016 year classes. The updated point estimate of $B_{40\%}$ is 118,140t. Since projected female spawning biomass (combined areas) for 2022 is 128,789 t (equivalent to B44%), sablefish is in sub-tier "a" of Tier 3. Spawning biomass is projected to continue to increase rapidly in the near-term (Figure 5-3), reaching B44% in 2022 and B51% in 2023. The updated point estimates of F40% and F35% from this assessment are 0.080 and 0.094, respectively. Thus, the maximum permissible value of FABC under Tier 3a is 0.080, which translates into a 2022 maximum permissible

ABC (combined areas) of 34,863 t. The OFL fishing mortality rate is 0.094, which translates into a 2022 OFL (combined areas) of 40,432 t. Current model projections indicate that the Alaskan sablefish stock is not subject to overfishing, not overfished, and not approaching an overfished condition.

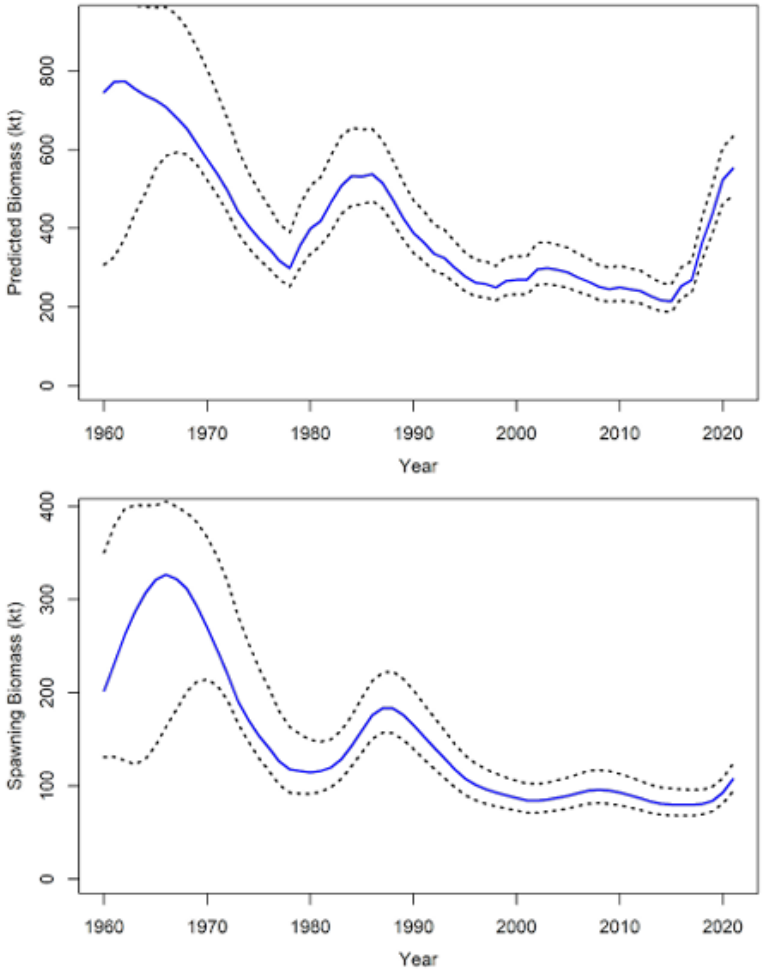


Figure 5-3 Estimated sablefish total biomass (top panel) and spawning biomass (bottom panel) with 95% MCMC credible intervals. Values are in kilotons. Source: Goethel et al. 2021

Sablefish in Alaska have undergone rapid changes in population dynamics over the last decade as multiple, nearly consecutive and extremely large year classes have entered the population (Goethel et al. 2020). Although the mechanistic drivers of these large recruitment events remain unclear (Shotwell et al. 2020), the resource complexion is now dominated by young, small, and primarily immature fish. Consequently, abundance and biomass has rebounded quickly from the lowest points on record in the mid-2010s to near historically high levels in recent years (Goethel et al. 2020). However, due to the partial maturity of these recent cohorts, SSB has yet to demonstrate as rapid of a recovery (although SSB has increased from the all-time low in 2018). Potentially associated with the influx of multiple unprecedented year classes, there have been apparent changes in condition (Shotwell et al. 2020) and potential impacts on growth and maturity (Echave 2021; Williams and Rodgveller 2021).

Annual estimated recruitment varies widely (Figure 5-4). The largest historical recruitment event was the 1977 year class, which was followed by above average year classes in 1997 and 2000. After 2000, few strong year classes occurred until 2014 – 2018. The 2014 and 2017 year classes appear to be on par with the 1977 year class, while the 2016 year class looks to be the largest on record (Figure 3.18b). Although

highly uncertain given the lack of informative composition data at this time, the 2018 year class appears to be near the time series high, too. The 2016 year class appears to be the largest on record and estimates of the size of this cohort appear to have stabilized. Additionally, it now appears that the series of recruitment events from 2014 – 2018 reflect those of the late 1970s and early 1980s. Based on the strength of these recent year classes, biomass estimates have more than doubled from a time series low of 215,000 t in 2015 to 553,000 t in 2021, exceeding the highs of the mid-1980s. From the time series low in 2017, SSB has increased by 34% to 108,000 t in 2021, which is 36% of the unfished SSB (i.e., SSB0). However, year classes since 2014 are projected to comprise over 50% of the 2022 spawning biomass. At the same time, the lack of fish greater than 10 years of age for an extremely long-lived species needs to be carefully monitored (Goethel et al. 2021).

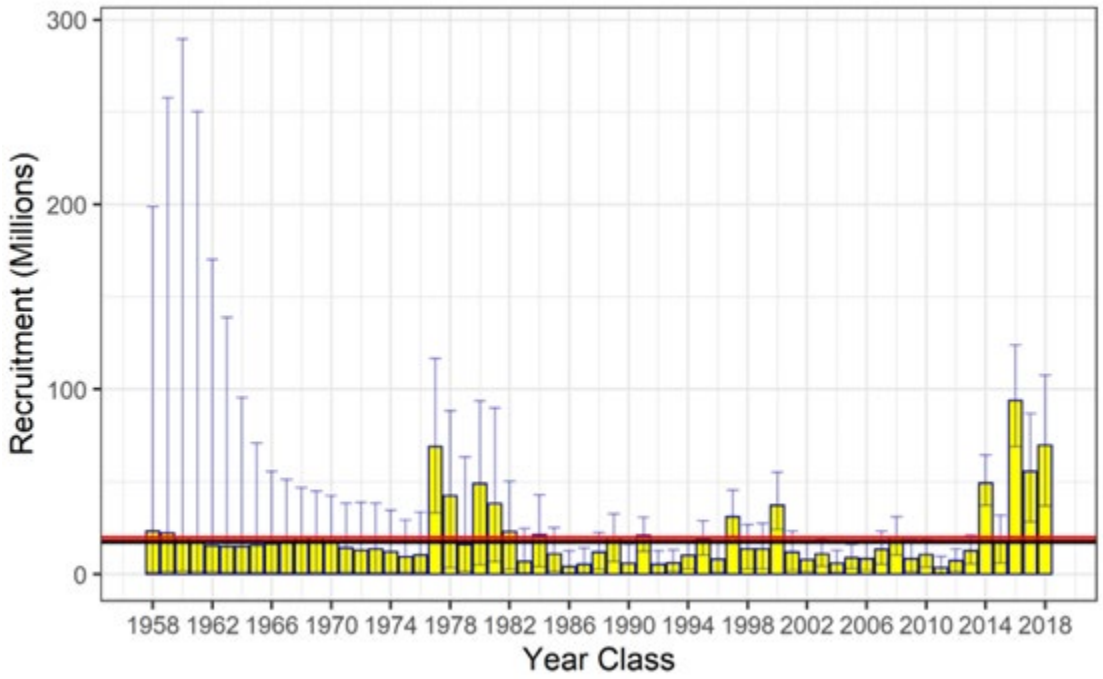


Figure 5-4 Estimated recruitment of age-2 sablefish (millions of fish) with 95% credible intervals from MCMC by year class (recruitment year minus two). The results for the new proposed model (21.10_Proposed) are in the top panel and those for the Continuity model (16.5_Cont) are in the bottom panel. Red line is overall mean, while black line is mean for recruitments from year classes between 1977 and 2017. Credible intervals are based on MCMC posteriors. The estimate for the 2018 year class (terminal year 2020 recruitment event) is omitted, because it is fixed to the estimated mean recruitment value (μr) with no deviation parameter estimated. From Goethel et al. 2021.

Due to the influx of young, small fish, the resultant longline survey abundance index has increased 2.5 fold since 2015, which is the year with the lowest index value on record. In 2020, the longline survey abundance index again increased by 30% from the 2019 value (Goethel et al., 2020). Although the increasing abundance indices are being driven by extreme recruitment events, there appears to be an increase in catch of small fish in deeper waters where they have historically been rare. The mechanism driving the increases in catch of small fish in deeper water survey stations remain unknown, but it could be due to density-dependent effects (i.e., 'spillover' out of preferred juvenile habitat) or changes in water temperature (Goethel et al 2021).

5.3.3 Effects of the Alternatives

The effects of the proposed alternatives in the IFQ/CDQ fisheries in the BSAI and GOA are addressed here. Table 5-3 describes the criteria used to determine whether the impacts on the halibut and sablefish stock are likely to be significant.

The effect of the commercial and other fisheries capturing halibut on the halibut stock is assessed annually, and reported for the IPHC's Interim and Annual Meetings, with the most recent summary in January 2022 (Stewart and Hicks, 2021). The halibut stock is neither overfished nor subject to overfishing. Biomass levels are projected to decrease in the near future due to lower recent recruitment and continued low size-at-age (Stewart and Hicks, 2021). However, it is estimated that the halibut fishery under the status quo level of fishing intensity is sustainable. Under either alternative, IPHC harvest strategy policy will continue to account for all sources of mortality, and neither alternative is expected to affect the general spatiotemporal distribution of the halibut harvest due to regulatory areas and the regulated IFQ fishing season. For these reasons, impacts to the halibut stock are expected to be insignificant.

Similarly, the effect of the commercial fisheries on the sablefish stock is assessed annually in the SAFE report (Goethel et al. 2021) as described in the previous section and evaluated in the Alaska Groundfish Fisheries Harvest Specifications EIS (NMFS 2007a). Current model projections indicate that the Alaskan sablefish stock is not subject to overfishing, not overfished, and not approaching an overfished condition. Under either alternative, catch limits for sablefish will continue to account for sources of mortality, and neither alternative is expected to affect the general spatiotemporal distribution of sablefish harvest due to regulatory areas and the regulated IFQ fishing season. For these reasons, impacts to the sablefish stock are also expected to be insignificant.

Table 5-3 Criteria used to determine significance of effects on target stocks.

Effect	Criteria			
	Significantly Negative	**Insignificant**	**Significantly Positive**	**Unknown**
Fishing mortality	Changes in fishing mortality are expected to jeopardize the ability of the stock to sustain itself at or above its MSST (minimum stock size threshold)	Changes in fishing mortality are expected to maintain the stock's ability to sustain itself above MSST	Changes in fishing mortality are expected to enhance the stock's ability to sustain itself at or above its MSST	Magnitude and/or direction of effects are unknown
Stock Biomass: potential for increasing and reducing stock size	Reasonably expected to jeopardize the capacity of the stock to yield sustainable biomass on a continuing basis.	Reasonably expected not to jeopardize the capacity of the stock to yield sustainable biomass on a continuing basis.	Action allows the stock to return to its unfished biomass.	Magnitude and/or direction of effects are unknown
Spatial or temporal distribution	Reasonably expected to adversely affect the distribution of harvested stocks either spatially or temporally such that it jeopardizes the ability of the stock to sustain itself.	Unlikely to affect the distribution of harvested stocks either spatially or temporally such that it has an effect on the ability of the stock to sustain itself.	Reasonably expected to positively affect the harvested stocks through spatial or temporal increases in abundance such that it enhances the ability of the stock to sustain itself.	Magnitude and/or direction of effects are unknown

5.3.3.1 Alternative 1

Under the no action alternative, pots used to fish IFQ in the GOA would still be required to have a nine-inch maximum tunnel opening, and effects on target species are minimal as described above. Under either alternative, there will be vessels that continue to use HAL to harvest halibut and sablefish IFQ. However, under the status quo, the ability of vessels to target halibut (and larger sablefish) using pot gear is limited

due to the pot tunnel maximum size requirement. Some unknown proportion of halibut and sablefish mortality will likely continue to be due to whale depredation, which represents a source of uncertainty in the assessments, as it is considered to be an unreported source of removals in the directed fishery. Sablefish mortality due to whale depredation of sablefish, while estimated in the assessment, is also a source of uncertainty. While this source of halibut and sablefish mortality, which occurs under the status quo, is not expected to maintain the ability of the stocks to sustain themselves above MSST, it is a source of mortality discussed in our effects of Alternative 2. Referring to Table 5-3, effects of Alternative 1 are expected to be insignificant when compared to the status quo, because Alternative 1 is not expected to have significant impacts on fishing mortality, stock biomass, or the spatial/temporal distribution of the target stocks.

5.3.3.2 Alternative 2

As described in past analyses (NPFMC 2016, NPFMC 2019), it is understood that whales prey on halibut and sablefish in the HAL IFQ fishery in the GOA and the HAL IFQ/CDQ fishery in the BSAI. Some of this depredation of HAL gear may go unobserved, and this source of removals is not directly included in the halibut stock assessment, though it is estimated for sablefish. Pot gear is an effective gear at minimizing depredation because whales cannot remove fish enclosed in a pot when the gear is soaking. Thus, there may be some level of decreased halibut and sablefish mortality if any harvest of IFQ/ CDQ shifts to pot gear due to increased flexibility of gear designs (particularly halibut under Element 4, which only applies to GOA), and whales are not able to prey on these fish.

NPFMC 2019, which focused on retention of halibut in pot gear in the BSAI, described that it was expected that the quantity of halibut likely to be landed using pots is likely to be small relative to the overall removals from the stock, particularly in the short term and would not include a demographic component (size or age) not already experiencing mortality in either non-halibut target fisheries or recreational fisheries. Further, the analysis noted, the IPHC's stock assessment allows for time-varying selectivity in the directed halibut fisheries, such that potential changes in size or age of halibut captured would be included in the estimates of fishing intensity (SPR), and therefore explicitly accounted for in the annual catch limit setting process (personal communication, I. Stewart 2018).

One impact to consider is how the increase in the use of pot gear also coincided with an increase in the prevalence of small fish due to a series of strong sablefish recruitment events (Goethel et al. 2021). As mentioned in Section 5.2.2, escape rings can mitigate some of the impacts of large amounts of small sablefish caught being in pot gear (unpublished data, Jane Sullivan, ABL, AFSC). In general, pots without escape rings tend to catch smaller sized sablefish. The use of escape rings shifts size selectivity of pot gear towards sizes that are comparable to HAL gear.[72]Sections 4.9.1 and 5.2.2 includes further discussion of escape rings.

Additional potential effects of the alternatives to those discussed in Section 4.2 include the following:

Effects of Element 1

The effects of Element 1, changes to the biodegradable panel, are considered in Section 5.2.1.

Effects of Element 2

No environmental impacts on the target species are expected as a result of Element 2 as noted in Section 5.1.2.

[72] personal communication, J. Sullivan, August 2021

Effects of Element 3

Under Element 3, any target catch of sablefish with jig gear in the GOA or BSAI would be required to be retained if the vessel has the necessary IFQ/CDQ. In recent years, sablefish fisheries have not been fully harvested (Figure 5-5). Therefore, there could be some increase in sablefish landings as a result of this action. However, sablefish harvests are limited both by the individual IFQs and TACs, and changes in sablefish harvest by jig gear would likely be a redistribution of effort from other gear types rather than overall changes in fishing mortality.

Harvest of halibut with jig gear is already legal in the BSAI and GOA, however it is possible that not all IFQ holders that intend to harvest sablefish IFQ using jig gear under this action would also hold halibut IFQ. In this case, any halibut caught on jig gear without the appropriate IFQ would need to be discarded. Observer data are not available on halibut bycatch in the existing jig gear fishery. However, NMFS estimates a negligible amount of halibut bycatch mortality because of the selective nature of jig gear and the low mortality rate of halibut caught with jig gear and released (86 FR 11449, February 25, 2021; 86 FR 10184, February 19, 2021). Halibut DMRs for all HAL gear (not jig gear specifically) is estimated at 9% in the BSAI and 13% for CVs in the GOA.

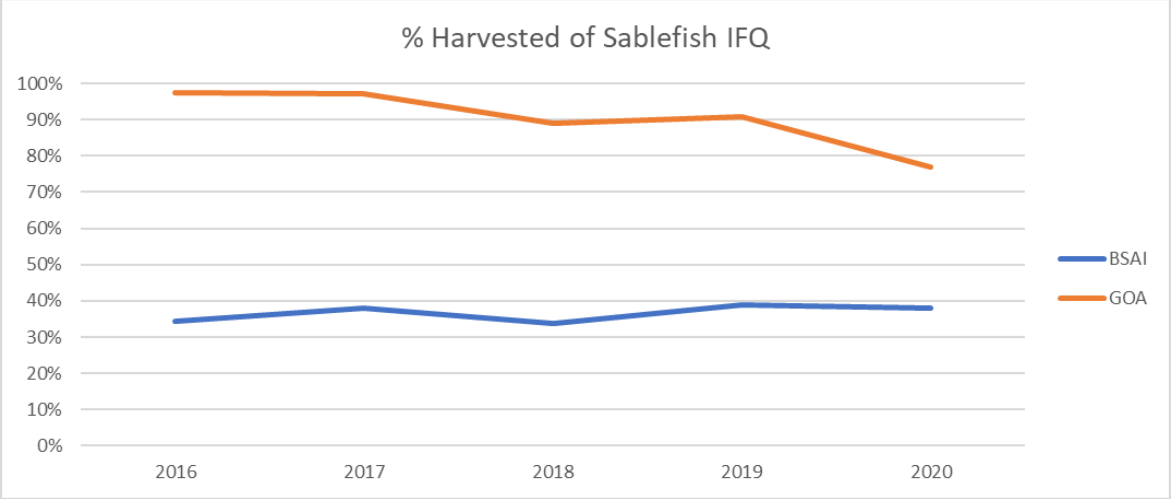


Figure 5-5 Percent of sablefish IFQ harvested in the GOA and BSAI, 2016-2020
Source: NMFS Alaska Region (RAM) division IFQ landings database sourced through AKFIN

Effects of Element 4

Element 4 (without the option) would allow those who possess both halibut and sablefish IFQ concurrently to use a pot tunnel opening that is larger than nine inches in the GOA. As discussed in Section 4.7.4, the nine-inch tunnel opening limits the ability of vessels to target halibut using pot gear but does not entirely exclude all sizes of halibut from entering pots. In general, it would be expected that pot gear would catch smaller halibut on average than HAL gear (NPFMC 2021), however, changes to the size of the tunnel opening under Element 4 would likely increase the number of larger halibut caught as compared with the gear currently authorized (nine-inch tunnel opening).

If the tunnel size used by IFQ fishermen increased under Element 4, it is expected that halibut catch, and the size of halibut caught in pots, may increase. However, because halibut fisheries in the GOA have generally been fully prosecuted, particularly in the GOA (Figure 5-6), this is likely to be redistribution of effort from targeting halibut using HAL gear rather than an actual increase in harvest. Furthermore, any increase in targeting of halibut (especially under Element 4) would not significantly increase overall fishing mortality because halibut harvests are limited by individual QS and overall catch limits (total

constant exploitation yield (TCEY)) set by the IPHC. In fact, this alternative may lead to a possible reduction in halibut mortality from whales preying on halibut in the HAL fishery corresponding if a portion of halibut IFQ/ CDQ shifts to pot gear due to the flexibility afforded through Element 4.

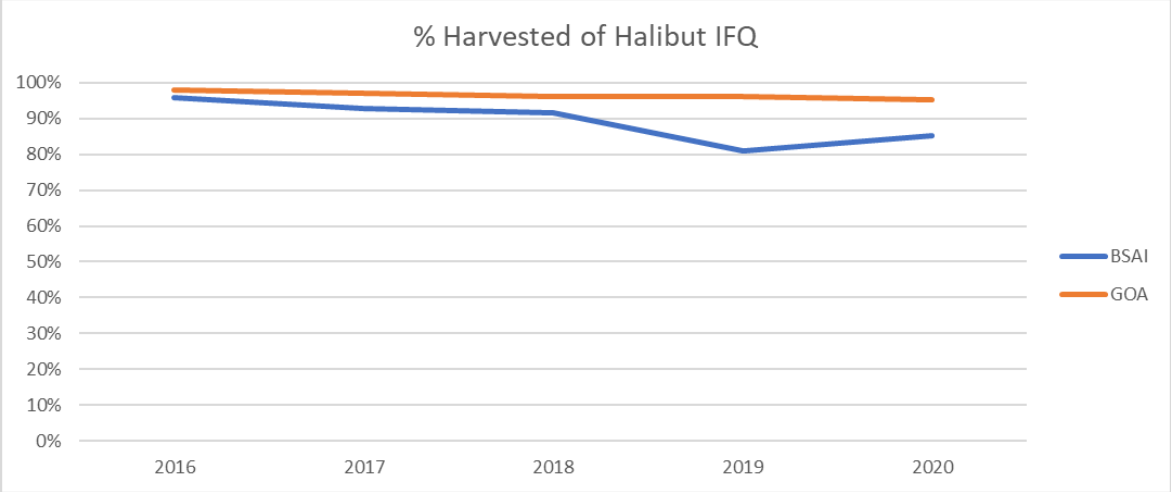


Figure 5-6 Percent of halibut IFQ harvested in Areas 2C and 3 (GOA) and Area 4 (BSAI), 2016-2020
Source: NMFS Alaska Region (RAM) division IFQ landings database sourced through AKFIN

Element 4 **with the option** would also allow those fishing sablefish IFQ with pots in the GOA and the BSAI to use tunnel openings greater than nine inches. While this is already authorized in the BSAI if the vessel also has halibut IFQ on board, this flexibility does not currently exist in the BSAI for those with sablefish IFQ only. There is potential for this to increase the size of sablefish in pots. If combined with the use of appropriately-sized escape rings (see Sections 4.9.1 and 5.2.2), sablefish fishermen may be more able to improve size selectivity, for which there is a private incentive. Without escape rings (not currently required by regulation) or escape rings that are not appropriately sized, it is possible that vessels could experience an increase in catch of smaller sablefish. This presents a difficulty for stock assessors as flexibility in gear design may increase the difficulty in tracking catch composition. From a stock assessment perspective, this has the potential to result in requests for increased EM/Observer coverage to better understand fishery-dependent data. This is mentioned again in Section 5.4.2 and discussed further in relation to other gear modifications in Section 4.9.

Another potential impact of the option under Element 4 is a potential for increased discarding of halibut caught in pots by vessels that only possess sablefish IFQ. Vessels that do not possess halibut IFQ are required to discard halibut as PSC. If vessels that possess only sablefish IFQ use pots with larger tunnel openings and catch of halibut increases, halibut mortality could also increase to some level. As mentioned in Section 4.7.4, IFQ participants may be able to target one species or the by fishing different depths or habitats, which could limit incidental catch of halibut. The discard mortality rate for halibut caught in pots in the BSAI and GOA are 33% and 29%, respectively (Table 5-4).

Table 5-4 Halibut DMRs specified for pot and HAL gear for halibut PSC management in GOA and BSAI groundfish fisheries for application in 2022 and 2023.

Area	Gear	Operation	2022/23 DMRs
BSAI	Pot	All	33%
	Hook-and-line	CP	10%
	Hook-and-line	CV	10% [a]
GOA	Pot	All	29%
	Hook-and-line	CP	15%
	Hook-and-line	CV	12%

Source: https://www.fisheries.noaa.gov/resource/document/halibut-discard-mortality-rates. Note: [a]Based on BSAI HAL CP

Sablefish fisheries in the GOA are not fully harvested. Therefore, sablefish mortality could increase under this action if an increased tunnel size leads to increased sablefish landings. However, sablefish harvests are limited both by limits on IFQ as well as by overall TAC. While dependent on several factors such as the depth at which gear is fished, if IFQ holders could target halibut with larger tunnel openings under this action, catch of larger sablefish also has the potential to increase.

Effects of Element 5 and 6

Any increase in pot limits or time gear may be on the grounds under Elements 5 or 6 could increase how efficiently a vessel could harvest its IFQ. However, because harvest of halibut is limited by IFQ pounds and halibut IFQ is generally fully allocated and harvested each year, total mortality would not increase. Additionally, no information in this analysis suggests that a temporal or seasonal shift in sablefish or halibut IFQ fishing is expected to occur under Alternative 2.

Considering the potentially affected environment and the degree of the effects of the alternatives when added to the impacts of past and present actions previously analyzed in other documents that are incorporated by reference and the impacts of reasonably foreseeable future actions, the impacts of the proposed alternatives are considered to be not significant.

5.4 Non-target species/incidental catch

5.4.1 Status

There are a number of different terms referring to the incidental catch of species in fisheries of the EEZ. In this section we make the following distinctions: FMP-managed secondary species are groundfish species that do not dominate the catch but may, in some cases, be retained (some of these groundfish species may be retained up to a certain cap called a maximum retainable amount (MRA)). Non-target species are not managed under an FMP, including species such as sea stars and eelpouts for which there is no significant market and generally no retention. Incidental catch can also include Prohibited Species Catch (PSC), species for which there is a significant market, but retention is prohibited (with the exception of some non-market-based donation programs). Marine mammals and seabirds are not included in this non-target species/incidental catch category.

5.4.2 Effects of the Alternatives

5.4.2.1 Alternative 1

Under the no action alternative, the amount and composition of bycatch species in the sablefish and halibut IFQ pot fisheries would not be expected to change. These mortalities are accounted for in the management of the species under the GOA and BSAI Groundfish FMP, which is designed to prevent

negative effects to groundfish stocks. Total catch of targeted groundfish is managed to prevent exceeding ABCs.

5.4.2.2 Alternative 2

Effects of Element 1

The effects of Element 1, changes to the biodegradable panel, are considered in Section 5.2.1.

Effects of Element 2

No environmental impacts are expected as a result of Element 2 as noted in Section 5.1.2.

Effects of Element 3

Section 4.7.3 explains how effort in a sablefish jig fishery would be expected to be minimal as result of this action. It is likely that jig gear would be used by few fishery participants for small amounts of sablefish quota. While a shift in gear types used for a target species may result in differences in catch composition, the selective nature of jig gear is not likely to have significant impacts on incidental catch species.

Vessels of all sizes that use jig gear are in the zero-selection pool for the Observer Program, thus there are no data on non-groundfish catch for jig gear. There are no data on incidental catch in sablefish targets using jig gear, however, composition of the cod target jig fishery demonstrates the minimal incidental catch of the gear type. Table 5-5 shows the catch composition of species managed under the Groundfish FMPs in cod target fisheries (HAL, jig, and pot) in 2019-2021. None of these species are overfished nor are they experiencing overfishing. In the Pacific cod target fishery, pollock is the main nontarget interaction with jig gear and less than one ton of pollock was caught across all three years, cumulatively. Further information on these groundfish species and, for some, their directed fisheries, can be found in the most recent GOA and BSAI Groundfish SAFE Reports. Nontarget and PSC data are not available for the jig fisheries, so no comparison can be made. True incidental catch composition of a sablefish target jig fishery may be more similar to that of the HAL sablefish IFQ fishery (Figure 5-7), but overall incidental catch is likely to be minimal. Additionally, any legal-sized halibut that are caught on jig gear are able to be harvested if the IFQ holder also has the appropriate halibut IFQ, potentially reducing the amount of discarded halibut.

Table 5-5 Catch composition of GOA FMP-managed groundfish in the cod target fisheries by gear type in tons and % of catch, summed 2019-2021.

Species	HAL catch (t)	JIG catch (t)	POT catch (t)	HAL	JIG	POT
cod, Pacific (gray)	741	10	16,522	4%	0%	96%
octopus, North Pacific	1		648	0%	0%	100%
sculpin, other large	54		124	30%	0%	70%
sole, yellowfin	0		146	0%	0%	100%
sculpin, yellow irish lord	0		111	0%	0%	100%
skate, other	91			100%	0%	0%
flounder, arrowtooth	13		42	24%	0%	76%
groundfish, general	0		42	0%	0%	100%
rockfish, other	20		11	65%	0%	35%
halibut, Pacific	22	0	0	99%	1%	0%

sculpin, great	0		18	1%	0%	99%
pollock, walleye	1	1	16	3%	5%	92%
sablefish (blackcod)	13		3	79%	0%	21%
shark, spiny dogfish	11		1	91%	0%	9%
sculpin, general	0		7	1%	0%	99%
greenling, atka mackerel	0		7	0%	0%	100%
Kamchatka flounder	6		0	97%	0%	3%
skate, longnose	6			100%	0%	0%
skate, big	3			100%	0%	0%
sole, flathead	0		3	3%	0%	97%
rockfish, dusky	0	1	1	19%	40%	40%
sculpin, bigmouth	1		1	47%	0%	53%
sculpin, plain	0		1	4%	0%	96%
sole, rock	0	0	1	1%	0%	98%
rockfish, shortraker	1		0	100%	0%	0%
rockfish, black	0		1	7%	0%	93%
flounder, general			1	0%	0%	100%
rockfish, thornyhead (idiots)	0			100%	0%	0%
rockfish, northern	0		0	2%	0%	98%
rockfish, yelloweye (red snapper)	0	0	0	83%	17%	0%
rockfish, quillback	0	0		100%	0%	0%
rockfish, rougheye	0			100%	0%	0%
turbot, Greenland	0		0	99%	0%	1%
Pacific sleeper shark	0			100%	0%	0%
flounder, Alaska plaice	0			100%	0%	0%
sole, dover	0		0	1%	0%	99%
sole, rex	0		0	0%	0%	100%
rockfish, canary	0			100%	0%	0%
rockfish, silvergray	0			100%	0%	0%
rockfish, redbanded	0			100%	0%	0%
perch, Pacific ocean	0		0	8%	0%	92%
sculpin, warty	0			100%	0%	0%
flounder, starry	0		0	35%	0%	65%
rockfish, china	0			100%	0%	0%
rockfish, yellowtail	0	0		0%	100%	0%
rockfish, redstripe	0			100%	0%	0%
shark, other	0			100%	0%	0%
rockfish, harlequin	0			100%	0%	0%
Bering flounder	0			100%	0%	0%

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Effects of Element 4

The ability to more selectively target halibut or larger sablefish in pots under Element 4 could shift some amount of effort from HAL to pot gear (described in Section 4.7.4). This may result in the incidental catch of the halibut and sablefish fisheries becoming more reflective of what has already been seen in the sablefish pot fishery, with the caveat that gear targeting halibut may be fished at different depths or locations than gear targeting sablefish. NPFMC 2021 described this catch composition in the first three years of the GOA sablefish pot fishery (Figure 5-7). There could be a decrease (by some amount) of skates, rockfish, Pacific cod, and grenadier, which are typically caught on HAL, and less prevalent in pot gear. In general, pot gear has less incidental catch than HAL gear. If a non-negligible amount of IFQ harvest shifts to the pot fishery, there could be a shift in the magnitude of bycatch, changes in size selectivity, and species composition of incidental catch. As described in Section 4.7, it is unlikely that a significant shift in effort will occur as a direct result of this action.

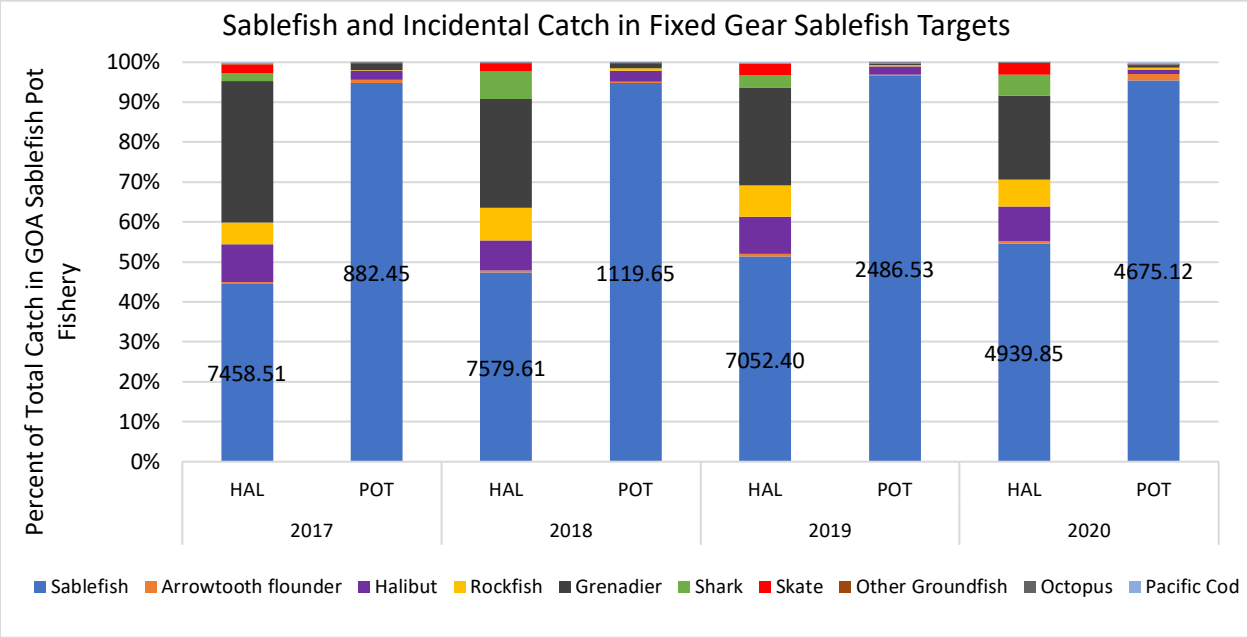


Figure 5-7 Sablefish and incidental catch in the sablefish HAL and pot gear, 2017-2020
Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN

Beyond a general shift towards pot gear from HAL gear, changes to the pot tunnel opening size may have other potential impacts on incidental catch composition within the pot fishery from the status quo. As described in Section 5.2.2, a change in the size of the tunnel opening (Element 4) could affect the amount and size of incidental catch. Quantitative data on the size and species of incidental catch in pots with different tunnel opening sizes are not collected. Changes to catch composition would depend on a number of factors including the depth at which the pot is fished. Theoretically, a larger tunnel opening (either for halibut or sablefish) could increase the overall amount of larger bycatch. Generally, it is expected that an increase in tunnel opening size could increase catch of flatfish species such as dover sole, arrowtooth flounder, and large shortraker, though more data are needed to make a clear determination.[73] Because there are MRAs for many species, harvesters have a private incentive to limit their incidental catch. Larger tunnel opening size could also increase potential for depredation within pots, for example, small sleeper sharks may prey on sablefish caught in pot gear.[74] The analysts note that IFQ harvesters have a private incentive to minimize incidental catch and depredation. Escape rings (described in Section 5.2.2)

[73] Personal communication, C. Lunsford, AFSC ABL, 2021.
[74] Personal communication, J. Sullivan, AFSC ABL, 2022.

could allow certain sized organisms to escape, ultimately reducing the magnitude of potential impacts on incidental catch.

Another impact of this additional flexibility to change the tunnel size, as with any changes to gear configuration, is that it may increase the difficulty in tracking catch composition. From a stock assessment perspective, this has the potential to result in requests for increased EM/Observer coverage to better understand fishery-dependent data. This is discussed further in relation to gear modifications in Section 4.9.

As described in NPFMC 2021, any tanner, snow or king crab caught in GOA sablefish pots must be discarded as PSC. PSC are reported by number of animals in Table 5-6; only tanner (*Chionoecetes bairdi*) and golden king crab (GKCR) have been observed in the GOA sablefish pot fishery. These data are extrapolated from observer data to the whole fishery. There are currently no PSC limits for crab in the GOA. A shift in halibut harvest from HAL to pot gear, and an increase in the size of the tunnel opening, could increase interactions with crab species. More data are needed to further analyze impacts of pots used in the IFQ fisheries in the GOA on crab, however, impacts on crab stocks as a result of this action are not expected to be significant.

Table 5-6 Crab PSC in the GOA sablefish pot fishery, in numbers

YEAR	GEAR	BAIRDI	GKCR
2017	POT	0	0
2018	POT	48	0
2019	POT	200	92
2020	POT	98	39
2021	POT	357	64

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN

Effects of Elements 5 and 6

As described above, pot gear used to fish sablefish IFQ yields less incidental catch than traditional HAL gear. Therefore, any further transition from HAL to pot gear as a result of this action, which is expected to be limited, would be expected to be accompanied by a corresponding shift in incidental catch composition to that of pot gear. In the GOA sablefish HAL fishery, the catch of non-sablefish species by number in HAL gear ranged from 38%-60% (mean = 48%) in GOA management areas between 2018 and 2020 (Figure 5-8). Non-target catch in the HAL fishery included grenadier, rockfish (e.g. shortspine thornyhead, shortraker, rougheye and blackspotted rockfish), Pacific halibut, sharks, skates, and flatfish species. In contrast, non-target catch in the sablefish pot fishery is minimal, ranging from <1%-16% (mean = 7%) by number in GOA management areas between 2018 and 2020 (Figure 5-8). When bycatch does occur in pots, it is primarily rockfish, flatfish, and grenadier.

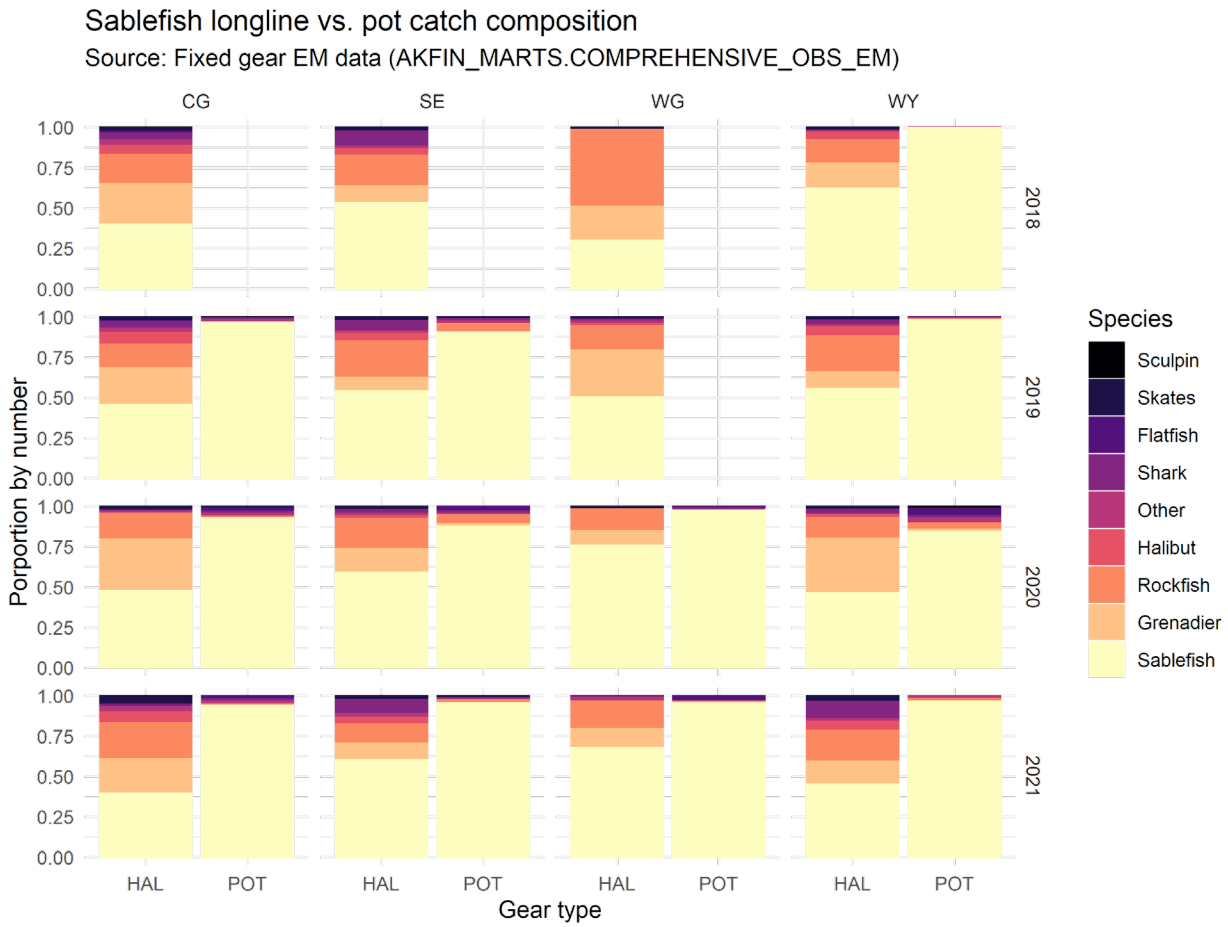


Figure 5-8 Species composition of IFQ sablefish catch in the GOA by management area and gear type.
Source: AKFIN_MARTS.COMPREHENSIVE_OBS_EM, accessed July 13, 2021).

Considering the potentially affected environment and the degree of the effects of the proposed alternatives when added to the impacts of past and present actions previously analyzed in other documents that are incorporated by reference, the impacts of the proposed alternatives are considered to be not significant.

5.5 Marine Mammals

5.5.1 Status

Alaska supports one of the richest assemblages of marine mammals in the world. Twenty-two species are present from the order Carnivora, superfamilies Pinnipedia (seals, sea lions, and walrus), Ursoidea (polar bears), and Musteloidea (sea otters), and from the order Artiodactyla, infraorder Cetacea (whales, dolphins, and porpoises). Some marine mammal species are resident in waters off Alaska throughout the year, while others migrate into or out of Alaska fisheries management areas. Marine mammals occur in diverse habitats, including deep oceanic waters, the continental slope, and the continental shelf, including inshore waters. The NMFS maintains management authority for all marine mammal species in Alaska, while the U.S. Fish and Wildlife Service (USFWS) is the designated management authority for northern polar bears, Pacific walrus, and northern sea otter.

The Marine Mammal Protection Act, the Endangered Species Act, and the Fur Seal Act are the relevant statutes for managing marine mammal interactions with human activities, including commercial fishing operations. The Marine Mammal Protection Act (MMPA) was enacted in 1972 with the ideal of ensuring that marine mammal populations continue to be functioning elements of the ecosystems of which they are

a part. One of the incentives for enacting the MMPA was to reduce take of marine mammals incidental to commercial fishing operations. While marine mammals may be lawfully taken incidentally in the course of commercial fishing operations, the 1994 MMPA Amendments established a requirement for commercial fishing operations to reduce incidental mortalities and serious injuries (M/SI) of marine mammals to insignificant levels approaching a zero rate, commonly referred to as the Zero Mortality Rate Goal (ZMRG). ZMRG is considered to be met for a marine mammal stock when the M/SI level from all commercial fisheries is 10% or below the Potential Biological Removal level (PBR) of that marine mammal stock (69 FR 43338, July 20, 2004). Likewise, the Endangered Species Act (ESA) was enacted to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve such conservation. In practice, the ESA outlines a program to protect endangered species on the brink of extinction and threatened species that are likely to be on the brink of extinction in the near future and pursue their recovery. The ESA also requires designation of any habitat of endangered or threatened species, which is then considered to have physical or biological features essential to the conservation of the species and which may require special management considerations or protection.

Under the MMPA a "population stock" is the fundamental unit of legally-mandated conservation and is defined as "a group of marine mammals of the same species or smaller taxa in a common spatial arrangement, which interbreed when mature." Stocks are identified in a manner consistent with the management goals of the MMPA which include 1) preventing stocks from diminishing such that they cease to be a significant functioning element in the ecosystem of which they are a part or below their optimum sustainable population keeping the carrying capacity of the habitat in mind; and 2) maintaining the health and stability of the marine ecosystem. Therefore, a stock is also recognized as being a management unit that identifies a demographically isolated biological population. While many types of information can be used to identify stocks of a species, it is recognized that some identified stocks may fall short of that threshold due to a lack of information.

Marine mammal Stock Assessment Reports (SARs) are published annually under the authority of the MMPA for all stocks that occur in state and Federal waters of the Alaska region (NMFS 2016). Individual SARs provide information on each stock's geographic distribution, population estimates, population trends, and estimates of the potential biological removal (PBR) levels for each stock. The SARs identify sources of human-caused mortality, including serious injury and mortality in commercial fishery operations, by fishery, and whether the stock has met ZMRG for all fisheries. The SARs also include the stock's ESA listing status and MMPA depleted and strategic designations. Strategic stock SARs are updated annually (Western Distinct Population Segment (WDPS) Steller sea lions, northern fur seals, bearded seals, ringed seals, Cook Inlet beluga whales, AT1 Transient killer whales, harbor porpoise, sperm whales, humpback whales (Western DPS and Mexico DPS), fin whales, North Pacific right whales (NPRW), and bowhead whales). SARs for non-strategic stocks are updated every three years or when significant new information is available.

Under the ESA species, subspecies, and distinct population segments (DPS) are eligible for listing as a threatened or endangered species. The ESA defines a species as "any subspecies of fish or wildlife or plants, and any DPS of any species of vertebrate fish or wildlife which interbreeds when mature." The joint USFWS /NMFS DPS policy (61 FR 4722; February 7, 1996) establishes two criteria that must be met for a population or group of populations to be considered a DPS: (1) The population segment must be discrete in relation to the remainder of the species (or subspecies) to which it belongs; and (2) the population segment must be significant to the remainder of the species (or subspecies) to which it belongs.

A population segment of a vertebrate species may be considered discrete if it satisfies either one of the following conditions: 1) it is markedly separated from other populations of the same taxon as a

consequence of physical, physiological, ecological, or behavioral factors; or 2) it is delimited by international governmental boundaries within which differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms exist that are significant in light of section 4(a)(1)(D) of the ESA. Significance determinations are made using available scientific evidence of the population's biological and ecological importance to the taxon to which it belongs. This may include, but is not limited to, one or more of the following: 1) persistence of the discrete population segment in an ecological setting unusual or unique for the taxon; 2) evidence that loss of the discrete population segment would result in a significant gap in the range of the taxon; 3) evidence that the discrete population segment represents the only surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside its historic range; or 4) evidence that the discrete population segment differs markedly from other populations of the species in its genetic characteristics. It is important to note that the MMPA stock designations and ESA DPS designations for a given species do not necessarily overlap due to differences in the defining criteria for each.

Marine mammals have been given various levels of protection under the current fishery management plans of the Council, and several species are the subjects of continuing research and monitoring to further define the nature and extent of fishery impacts on them. A number of conservation concerns and/or management determinations may be related to marine mammals and the potential impacts of fishing. For individual species, these concerns or determinations may include-

- Protection under the ESA:
  - listed as endangered or threatened
  - critical habitat listing
  - placed on NMFS' list of "species of concern" or designated as a "candidate species" for ESA listings;
- Protection under the MMPA:
  - designated as depleted or strategic;
  - focus of a Take Reduction Plan;
- Other:
  - declining or depressed populations in a manner of concern to State or Federal agencies;
  - large bycatch or other mortality related to fishing activities; or
  - vulnerability to direct or indirect adverse effects from some fishing activities.

The Alaska Groundfish Fisheries Programmatic Supplemental Environmental Impact Statement (PSEIS) (NMFS 2004) provides descriptions of the range, habitat, and diet for marine mammals found in waters off Alaska. The 2015 PSEIS Supplemental Information Report (NMFS 2015) provides updates on changes to marine mammal stock or species-related management and status, as well as new information regarding impacts on marine mammal stocks and new methods to assess impacts. The information from the PSEIS and the SARs is incorporated by reference.

Marine mammal stocks, including those currently listed as endangered or threatened under the ESA or depleted or strategic under the MMPA that may be present in the action area are listed in Table 5-7 (GOA), Table 5-8 (AI), and Table 5-9 (BS). ESA section 7 formal and informal consultations with respect to the actions of the Federal groundfish fisheries have been completed for all of the ESA-listed species, either individually or in groups (NMFS 2010 and NMFS 2014). Of the species listed under the ESA or stocks designated as depleted or strategic under the MMPA and present in the action area, several species may be more vulnerable than others to being adversely affected by commercial groundfish fishing. These include: Steller sea lions, Cook Inlet beluga whales, humpback whales, North Pacific right whales, northern sea otters, polar bears, bearded seals, and sperm whales.[75] Stocks designated as depleted or

[75] Based on ESA listed status and having not met or an unknown ZMRG

strategic under the MMPA, but not listed as threatened or endangered under the ESA, that may be vulnerable to being adversely affected by commercial groundfish fishing include northern fur seals, harbor porpoise, AT1 killer whales and Pacific walrus.[76]

Table 5-7 Marine mammals that are known to occur in the Gulf of Alaska.

Infraorder or Superfamily	Species	MMPA Stock	ESA or MMPA Status	ZMRG Status (all fisheries)
Pinnipedia	Steller sea lion *(Eumatopias jubatus)*	Western U.S	Endangered, Depleted, Strategic	Not Met
		Eastern U.S.	None	Met
	Northern fur seal *(Callorhinus ursinus*)	Eastern Pacific	Depleted, Strategic	Met
	Harbor seal *(Phoca vitulina)*	Northern Kodiak	None	Met
		Southern Kodiak	None	Met
		Prince William Sound	None	Met
		Cook Inlet/Shelikof Strait	None	Met
		Glacier Bay/Icy Strait	None	Met
		Lynn Canal/Stephens Passage	None	Met
		Sitka/Chatham Strait	None	Met
		Dixon/Cape Decision	None	Met
		Clarence Strait	None	Met
	Ribbon seal *(Phoca fasciata)*	Alaska	None	Met
	Northern elephant seal *(Mirounga angustirostris)*	California***	None	Met
Cetacea	Beluga whale (*Delphinapterus leucas*)	Cook Inlet (includes Yakutat Bay animals)	Endangered, Depleted, Strategic	Unknown****
	Killer whale *(Orcinus orca)*	Eastern North Pacific Northern Resident	None	Met
		Eastern North Pacific Alaska Resident	None	Met
		Eastern North Pacific GOA, Aleutian Islands, and Bering Sea Transient	None	Not Met
		AT1 Transient	Depleted, Strategic	Met
		West Coast Transient	None	Met
		Eastern North Pacific Offshore***	None	Met
	Pacific white-sided dolphin (*Lagenorhynchus obliquidens*)	North Pacific	None	Unknown*
	Harbor porpoise *(Phocoena phocoena)*	Southeast Alaska	None	Not Met
		Gulf of Alaska	None	Unknown*
	Dall's porpoise (*Phocoenoides dalli*)	Alaska	None	Unknown*
	Sperm whale (*Physeter macrocephalus*)	North Pacific	Endangered, Depleted, Strategic	Unknown*
	Baird's beaked whale (*Berardius bairdii*)	Alaska	None	Unknown*
	Cuvier's beaked whale (*Ziphius cavirostris)*	Alaska	None	Unknown*
	Stejneger's beaked whale (*Mesoplodon stejnegeri*)	Alaska	None	Unknown*
	Gray whale *(Eschrichtius robustus)*	Eastern North Pacific***	None	Met
	Humpback whale† *(Megaptera novaeangliae)*	Western North Pacific‡	Western North Pacific DPS: Endangered, Depleted, Strategic Hawaii DPS: None	Not Met
		Central North Pacific‡‡	Mexico DPS: Threatened, Depleted, Strategic Hawaii DPS: None	Not Met
	Fin whale *(Balaenoptera physalus*)	Northeast Pacific	Endangered, Depleted, Strategic	Met
	Minke whale *(Balaenoptera acutorostrata)*	Alaska	None	Unknown*
	North Pacific right whale *(Eubalaena japonica)*	Eastern North Pacific	Endangered, Depleted, Strategic	Unknown*
	Blue whale *(Balaenoptera musculus)*	Eastern North Pacific***	Endangered, Depleted, Strategic	Met
	Sei whale *(Balaenoptera borealis)*	Eastern North Pacific***	Endangered, Depleted, Strategic	Met
Mustelidae	Northern sea otter *(Enhydra lutris)*	Southeast Alaska	None	Unknown*
		Southcentral Alaska	None	Unknown*

Sources: Muto et al 2021; Carretta et al 2021; List of Fisheries for 2021 (January 14, 2021, 86 FR 3028)
*Unknown due to unknown abundance estimate and PBR.
**Unknown due to inadequate observer coverage,
*** This stock is found in the Pacific, rather than in the Alaska, SAR.
****Unknown due to lack of data on cause of death

[76] Based on MMPA depleted and strategic status

† On September 8, 2016, NMFS published a final decision revising the status of humpback whales under the ESA (81 FR 62259), effective October 11, 2016. In the 2016 decision, NMFS recognized the existence of 14 DPSs, classified several as endangered and one as threatened, and determined the remaining DPSs do not warrant protection under the ESA. Three DPSs of humpback whales occur in waters off the coast of Alaska: Western North Pacific (WNP) DPS, the Mexico DPS and the Hawaii DPS. Whales from these three DPSs overlap to some extent on feeding grounds off Alaska. As of October 2016, the MMPA stock designations of humpback whales found in Alaska have not been updated to reflect the newly-designated DPSs. Critical habitat for humpback whales was established on April 21, 2021 (86 FR 21082).
‡ Includes the Western North Pacific and Hawaii DPS's
‡‡ Includes the Mexico and Hawaii DPS's.

Table 5-8 Marine mammals known to occur in the Aleutian Islands subarea.

Infraorder or Superfamily	Species	MMPA Stock	ESA or MMPA Status	ZMRG Status (all fisheries)
Pinnipedia	Steller sea lion *(Eumatopias jubatus)*	Western U.S	Endangered, Depleted, Strategic	Not Met
	Northern fur seal *(Callorhinus ursinus*)	Eastern Pacific	Depleted, Strategic	Met
	Harbor seal *(Phoca vitulina)*	Aleutian Islands	None	Met
	Ribbon seal *(Phoca fasciata)*	Alaska	None	Met
	Northern elephant seal *(Mirounga angustirostris)*	California***	None	Met
Cetacea	Killer whale *(Orcinus orca)*	Eastern North Pacific Alaska Resident	None	Met
		Eastern North Pacific GOA, Aleutian Islands, and Bering Sea transient	None	Not Met
		Offshore***	None	Met
	Pacific White-sided dolphin (*Lagenorhynchus obliquidens*)	North Pacific	None	Unknown*
	Harbor porpoise *(Phocoena phoecena)*	Bering Sea	None	Unknown*
	Dall's porpoise (*Phocoenoides dalli*)	Alaska	None	Unknown*
	Sperm whale (*Physeter macrocephalus*)	North Pacific	Endangered, Depleted, Strategic	Unknown*
	Baird's beaked whale (*Berardius bairdii*)	Alaska	None	Unknown*
	Cuvier's beaked whale (*Ziphius cavirostris)*	Alaska	None	Unknown*
	Stejneger's beaked whale (*Mesoplodon stejnegeri*)	Alaska	None	Unknown*
	Gray whale *(Eschrichtius robustus)* ***	Eastern North Pacific***	None	Met
	Humpback whale *(Megaptera novaeangliae)* †	Western North Pacific‡	Western North Pacific DPS: Endangered, Depleted, Strategic Hawaii DPS: None	Not Met
		Central North Pacific ‡‡	Mexico DPS:Threatened, Depleted, Strategic Hawaii DPS: None	Not Met
	Fin whale *(Balaenoptera physalus)*	Northeast Pacific	Endangered, Depleted, Strategic	Met
	Minke whale *(Balaenoptera acutorostrata)*	Alaska	None	Unknown*
	North Pacific right whale *(Eubalaena japonica)*	Eastern North Pacific	Endangered, Depleted, Strategic	Unknown*
	Blue whale *(Balaenoptera musculus)*	Eastern North Pacific***	Endangered, Depleted, Strategic	Met
	Sei whale *(Balaenoptera borealis)*	Eastern North Pacific***	Endangered, Depleted, Strategic	Met
Mustelidae	Northern sea otter *(Enhydra lutris)*	Southwest Alaska	Threatened, Depleted, Strategic	Unknown**

Sources: Muto et al 2021; Carretta et al 2021; List of Fisheries for 2021, (January 14, 2021, 86 FR 3028)
*Unknown due to unknown abundance estimate and PBR.
** Unknown due to inadequate observer coverage.
*** This stock is found in the Pacific, rather than in the Alaska, SAR.
† On September 8, 2016, NMFS published a final decision revising the status of humpback whales under the ESA (81 FR 62259), effective October 11, 2016. In the 2016 decision, NMFS recognized the existence of 14 DPSs, classified several as endangered and one as threatened, and determined that the remaining DPSs do not warrant protection under the ESA. Three DPSs of humpback whales occur in waters off the coast of Alaska: Western North Pacific (WNP) DPS, the Mexico DPS, and the Hawaii DPS. Whales from these three DPSs overlap to some extent on feeding grounds off Alaska. As of October 2016, the MMPA stock designations of humpback whales found in Alaska have not been updated to reflect the newly-designated DPSs. Critical habitat for humpback whales was established on April 21, 2021 (86 FR 21082).
‡ Includes the Western North Pacific and Hawaii DPS's
‡‡ Includes the Mexico and Hawaii DPS's.

Table 5-9 Marine mammals known to occur in the Bering Sea.

Infraorder or Superfamily	Species	MMPA Stock	ESA or MMPA Status	ZMRG Status (all fisheries)
Pinnipedia	Steller sea lion *(Eumatopias jubatus)*	Western U.S.	Endangered, Depleted, Strategic	Not Met
	Northern fur seal *(Callorhinus ursinus*)	Eastern Pacific	Depleted, Strategic	Met
	Harbor seal *(Phoca vitulina)*	Pribilof Islands	None	Met
		Bristol Bay	None	Met
	Ribbon seal *(Phoca fasciata)*	Alaska	None	Met
	Bearded seal *(Erignathus barbatus nauticus)*	Alaska [a]	Threatened, Depleted, Strategic	Met
	Spotted seal *(Phoca largha)*	Alaska [b]	None	Met
	Ringed seal *(Phoca hispida)*	Alaska [c]	Threatened, Depleted, Strategic	Met
	Pacific Walrus *(Odobenus rosmarus divergens)*	Alaska [d]	Strategic	Met
Cetacea	Killer whale *(Orcinus orca)*	Eastern North Pacific Alaska Resident	None	Met
		Eastern North Pacific GOA, Aleutian Islands, and Bering Sea transient	None	Not Met
		Offshore***	None	Met
	Pacific White-sided dolphin (*Lagenorhynchus obliquidens*)	North Pacific	None	Unknown*
	Harbor porpoise *(Phocoena phoecena)*	Bering Sea	None	Unknown*
	Dall's porpoise (*Phocoenoides dalli*)	Alaska	None	Unknown*
	Beluga whale *(Delphinapterus leucas)*	Beaufort Sea	None	Met
		Eastern Chukchi Sea	None	Met
		Eastern Bering Sea	Strategic	Met
		Bristol Bay	None	Met
	Baird's beaked whale (*Berardius bairdii*)	Alaska	None	Unknown*
	Stejneger's beaked whale (*Mesoplodon stejnegeri*)	Alaska	None	Unknown*
	Sperm whale (*Physeter macrocephalus*)	North Pacific	Endangered, Depleted, Strategic	Unknown*
	Bowhead whale *(Balaena mysticetus)*	Western Arctic (Also known as Bering-Chukchi-Beaufort stock)	Endangered, Depleted, Strategic	Met
	Humpback whale *(Megaptera novaeangliae)* †	Western North Pacific‡	WNP DPS: Endangered, Depleted, Strategic Hawaii DPS: None	Not Met
		Central North Pacific ‡‡	Mexico DPS-Threatened, Depleted, Strategic Hawaii DPS - None	Not Met
	Fin whale *(Balaenoptera physalus)*	Northeast Pacific	Endangered, Depleted, Strategic	Met
	Minke whale *(Balaenoptera acutorostrata)*	Alaska	None	Unknown*
	North Pacific right whale *(Eubalaena japonica)*	Eastern North Pacific	Endangered, Depleted, Strategic	Unknown*
	Blue whale *(Balaenoptera musculus)*	Eastern North Pacific***	Endangered, Depleted, Strategic	Met
Mustelidae	Northern sea otter *(Enhydra lutris)*	Southwest Alaska	Threatened, Depleted, Strategic	Unknown**
Ursoidea	Polar Bear *(Ursus maritimus)*	Chukchi/Bering Sea	Threatened, Depleted, Strategic	Unknown*

Sources: Muto et al 2021; Carretta et al 2021; List of Fisheries for 2021 (January 14, 2021, 86 FR 3028)

* Unknown due to unknown abundance estimate and PBR.

** Unknown due to inadequate observer coverage or unreliable SI/M estimate.

*** This stock is found in the Pacific, rather than in the Alaska, SAR.

† On September 8, 2016, NMFS published a final decision revising the status of humpback whales under the ESA (81 FR 62259), effective October 11, 2016. In the 2016 decision, NMFS recognized the existence of 14 DPSs, classified several as endangered and one as threatened, and determined that the remaining DPSs do not warrant protection under the ESA. Three DPSs of humpback whales occur in waters off the coast of Alaska: The Western North Pacific (WNP) DPS, the Mexico DPS, and the Hawaii DPS. Whales from these three DPSs overlap to some extent on feeding grounds off Alaska. As of October 2016, the MMPA stock designations of humpback whales found in Alaska have not been updated to reflect the newly-designated DPSs. Critical habitat for humpback whales was established on April 21, 2021 (86 FR 21082).

‡ Includes the Western North Pacific and Hawaii DPS's

‡‡ Includes the Mexico and Hawaii DPS's.

[a] Bearded seals: Two DPSs are identified for this subspecies, but only the Beringia DPS occurs in US waters. Therefore, the Alaska stock identified under the MMPA SAR consists entirely of the Beringia DPS. The Beringia DPS was most recently listed as threatened under the ESA in October 2016. Critical habitat for the Beringia DPS was proposed in January 2021.

[b] Spotted seals: Three DPSs are identified, but only the Bering DPS occurs in US waters. Therefore, the Alaska stock identified under the MMPA SAR consists entirely of the Bering DPS.

[c] Ringed seals were listed as threatened under the ESA in December 2012. Critical habitat for ringed seals was proposed in January 2021.

[d] Walrus – A petition to list walrus under the ESA was determined to be warranted, but precluded by higher priorities (76 FR 7634, February 10, 2011). The USFWS is under court order to make a decision on the listing in 2017. As of October 5, 2017, NMFS determined that listing is no longer warranted for the Pacific walrus.

The Alaska Groundfish Harvest Specifications EIS provides information on the effects of the groundfish fisheries on marine mammals (NMFS 2007), and has been updated with Supplemental Information Reports (SIRs) (NMFS 2021). These documents are also incorporated by reference. Direct and indirect interactions between marine mammals and groundfish fishing vessels may occur due to overlap in the size and species of groundfish harvested in the fisheries that are also important marine mammal prey, and due to temporal and spatial overlap in marine mammal occurrence and commercial fishing activities. The following discussion focuses on those marine mammals that may interact with or be affected by a jig fishery for sablefish in the GOA and/or BSAI (Element 3), or changes to pot limits or gear retrieval requirements in the GOA IFQ fisheries (Elements 5 and 6). This includes North Pacific Right Whales, sperm whales, and humpback whales, mainly due to entanglement concerns with gear. The population trends and distribution of these stocks/DPS are included in Table 5-10 and are referred to in the following sections. The other elements in Alternative 2 and Alternative 3 are not expected to have impacts on marine mammals.

Table 5-10 Status of cetacean stocks potentially affected by the action

Cetacean Stock/DPS	Population Trends	Distribution in Action Area
North Pacific right whale - Eastern North Pacific	This stock is considered to represent only a small fraction of its pre-commercial whaling abundance and is arguably the most endangered stock of large whales in the world. A reliable estimate of trend in abundance is currently not available.	Before commercial whaling on right whales, concentrations were found in the GOA, eastern Aleutian Islands, south-Central Bering Sea, Sea of Okhotsk, and Sea of Japan (Braham and Rice 1984). During 1965–1999, following large illegal catches by the U.S.S.R., there were only 82 sightings of right whales in the entire eastern North Pacific, with the majority of these occurring in the Bering Sea and adjacent areas of the Aleutian Islands (Brownell et al. 2001). Recently (2000-2020), sightings and acoustic detections have been observed in the western GOA in addition to the BSAI. Critical habitat is designated in the southern Bering Sea and near Kodiak Island in the GOA.
Sperm whale – North Pacific	Abundance and population trends in Alaska waters are unknown.	The sperm whale is one of the most widely distributed marine mammal species. In the North Pacific, sperm whales are distributed widely, with the northernmost boundary extending from Cape Navarin (62°N) to the Pribilof Islands and may move to higher latitudes in summer and to lower latitudes in winter. Sperm whales are found year-round in the Gulf of Alaska, although they appear to be more common in summer than in winter. Female sperm whales have been found above 50°N, in the western Bering Sea and in the western Aleutian Islands with movements into the Gulf of Alaska and western Aleutians. Males are found in the summer in the Gulf of Alaska, Bering Sea, and waters around the Aleutian Islands. Sperm whales are known to inhabit waters 600 m or more depth.
Humpback whale - Western North Pacific†	Using the SPLASH population estimate (N) of 1,107 and an assumed conservative CV(N) of 0.300 would result in an Nmin for this humpback whale stock of 865. The SPLASH abundance estimate for Asia/2nd western N Pacific population represents a 6.7% annual rate of increase over the 1991-1993 abundance estimate (Calambokidis et al. 2008). However, the 1991-1993 estimate was for Ogasawara and Okinawa breeding grounds only, whereas the SPLASH estimate includes the Philippines, so the annual rate of increase is biased high to an unknown degree	The winter distribution of humpback whales in the Western stock includes several island chains in the western North Pacific, including the Ogasawara Islands, the Okinawa region, and in the Philippines. Humpback whales are reported to also occur in the South China Sea north of the Philippines near Taiwan, and east of Ogasawara in the Marshall and Mariana Islands. Humpback whales are increasingly seen north of the Bering Strait into the northeastern Chukchi Sea, with some indication that more humpback whales are seen on the Russian side north of the Bering Strait. A large area of overlap with the western North Pacific stock in the summer occurs in Southcentral Alaska

		and along the Aleutian Islands to about Umnak Island, as well as in Southwestern Alaska and Bristol Bay to approximately Cape Newenham.
Humpback whale - Central North Pacific†	The best minimum population estimate for the population is 7,891. Overall, the abundance trend is increasing and from SPLASH estimates the North Pacific represents an annual increase of 4.9% since 1991–1993. SPLASH abundance estimates for Hawaii show annual increases of 5.5% to 6.0% since 1991–1993 (Calambokidis et al. 2008). Reliable trend information for the Mexico DPS, part of which constitutes a part of the Central North Pacific stock, is not available at this time due to variability in the estimates from the early 1990s. A 6.9% increase might be indicated across the entire Mexico DPS. However the Mexico DPS is listed as threatened due to a low abundance estimate and the ongoing threat of entanglement in fishing gear.	The winter distribution of the Central North Pacific stock is primarily in the Hawaiian archipelago and a smaller percentage along the Pacific Mexican coast of mainland Mexico, the Baja Peninsula, and the Revillagigedos Islands. In summer, the majority of whales from the Central North Pacific stock are found in the Aleutian Islands, Bering Sea, Gulf of Alaska, and Southeast Alaska/northern British Columbia. A large area of overlap with the western North Pacific stock in the summer occurs in Southcentral Alaska and along the Aleutian Islands to about Umnak Island, as well as in Southwestern Alaska and Bristol Bay to approximately Cape Newenham.

Sources: Muto et al 2021; List of Fisheries for 2021(January 14, 2021, 86 FR 3028) .
† On September 8, 2016, NMFS published a final decision revising the status of humpback whales under the ESA (81 FR 62259), effective October 11, 2016. In the 2016 decision, NMFS recognized the existence of 14 DPSs, classified several as endangered and one as threatened, and determined that the remaining DPSs do not warrant protection under the ESA. Three DPSs of humpback whales occur in waters off the coast of Alaska: the Western North Pacific (WNP) DPS, the Mexico DPS, and the Hawaii DPS, Whales from these three DPSs overlap to some extent on feeding grounds off Alaska. As of October 2016, the MMPA stock designations of humpback whales found in Alaska have not been updated to reflect the newly-designated DPSs. Critical habitat for humpback whales was established on April 21, 2021 (86 FR 21082).

North Pacific Right Whales

The NPRW is listed as endangered under the ESA, and therefore designated as depleted under the MMPA. In 2008, NMFS relisted the NPRW as endangered as a separate species (*Eubalaena japonica*) from the North Atlantic species, *E. glacialis* (73 FR 12024, 06 March 2008). As a result, the stock is classified as a strategic stock. The abundance of this stock is considered to represent only a small fraction of its pre-commercial whaling abundance (i.e., the stock is well below its Optimum Sustainable Population). The estimated annual rate of human-caused mortality and serious injury is considered minimal for this stock (Muto et al., 2021). Potential threats to the habitat of this population derive primarily from commercial shipping and fishing vessel activity. There is considerable fishing activity within portions of the critical habitat of this species, increasing the risk of entanglement, although photographs of right whales taken to date have shown no evidence of entanglement scars; the sole exception is the animal photographed in the Strait of Juan de Fuca in October 2013 (Ford et al. 2016). Likewise, there have been no observed or reported interactions between fisheries and right whales (Muto et al 2021).

NMFS designated critical habitat for North Pacific right whales in areas that co-occur with groundfish fishing areas GOA in 2008. In 2006, NMFS recognized the potential for North Pacific right whales to be entangled in groundfish fishing gear given the overlap of right whale sightings and groundfish fishing areas (December 27, 2006, 71 FR 77694). As mentioned above, NMFS PRD determined that the Alaska groundfish fisheries were not likely to adversely affect the North Pacific right whale. The NMFS PRD determination considered the probability of exposure as well as the probability of harm in reaching its "not likely to adversely affect" determination. If a right whale were to become entangled in fishing gear the probability of harm would be high given the critical status of the species. However, given the considerable amount of fishing effort in the North Pacific with no recorded interactions with right whales, and few documented sightings of right whales in waters off Alaska, NMFS PRD concluded that the Alaska groundfish fisheries (including the sablefish IFQ fishery and existing pot gear fisheries) were not likely to take North Pacific right whales. In addition, the analysis for Amendment 101 explained how the directed sablefish fishery generally occurred in waters deeper than the depth of the GOA right whale

critical habitat (NPFMC 2016). As with the determinations for the status quo fisheries, it is unlikely that the proposed action will adversely affect North Pacific right whales or its designated critical habitat.

Sperm Whales

Sperm whales were listed as endangered under the Endangered Species Conservation Act, the predecessor to the Endangered Species Act (ESA), in 1970. When the ESA was passed in 1973, the sperm whale was listed as endangered throughout its range. In the North Pacific, sperm whales are distributed widely, with the northernmost boundary extending from Cape Navarin (62°N) to the Pribilof Islands (Omura 1955). Sperm whales generally inhabit waters 600 m or more depth. While females and young generally stay in tropical and temperate waters, males may be seen during the summer in the Gulf of Alaska, Bering Sea and throughout the Aleutian Islands (ADF&G n.d.), where they feed on the rich biomass of the North Pacific. Sperm whales feed primarily on medium to large-size squids but also take substantial quantities of large demersal and mesopelagic sharks, skates, and fishes (Rice 1989).

Abundance and populations trends of sperm whales in Alaska waters are unknown. New estimates in the GOA indicate a population size of about 345 sperm whales, but no information on trend is available (Rone et al. 2017) because historical estimates of the abundance of sperm whales in the North Pacific are considered unreliable. Sighting surveys conducted by the AFSC's Marine Mammal Laboratory (MML) in the summer months between 2001 and 2010 found sperm whales to be the most frequently sighted large cetacean in the coastal waters around the central and western Aleutian Islands (MML, unpubl. data).

While the PBR for the North Pacific sperm whale stock is unknown, there was 1 observed and 6 estimated serious injuries observed in the Gulf of Alaska sablefish longline fishery from 2014-2018 (Muto et al. 2021). Between 2014 and 2018, mortality and serious injury of sperm whales was observed in the Bering Sea/Aleutian Islands halibut longline fishery (one serious injury in 2015, prorated at 0.75), the Aleutian Islands sablefish pot fishery (one mortality in 2018), and the Gulf of Alaska sablefish longline fishery (one serious injury in 2016, prorated at 0.75) (Muto et. al 2021).

Sperm whales have been observed depredating both halibut and sablefish longline fisheries in the Gulf of Alaska and this is particularly common in sablefish longline fisheries in the central and eastern Gulf of Alaska; this depredation can lead to mortality or serious injury if hooking or entanglement occurs. Potential threats most likely to result in direct human-caused mortality or serious injury of this stock include entanglement in fishing gear and ship strikes due to increased vessel traffic (from increased shipping in higher latitudes).

According to the 2010 Biological Opinion (NMFS 2010), the potential for ship strikes is minimal and unlikely to result in an adverse population level effect for sperm whales in Alaska. Because they are an endangered species, fishermen and scientists are concerned about potential entanglements in fishing gear. Entanglements are costly and dangerous to fishermen and can force fishery closures. Incidence of sperm whale entanglement in Alaska appears to be low and would not be expected to reach a level that would have population-level consequences (NMFS 2010). On the basis of total abundance, current distribution, and regulatory measures that are currently in place, it is unlikely that this stock is in danger of extinction (Braham 1992, as cited in Muto et al. 2017).

Humpback Whales

On September 8, 2016, NMFS published a final decision changing the status of humpback whales under the ESA (81 FR 62259). In the 2016 decision, NMFS recognized the existence of 14 DPSs, classified four of those as endangered and one as threatened, and determined that the remaining nine DPSs do not warrant protection under the ESA. Three DPSs of humpback whales occur in waters off the coast of Alaska: the Western North Pacific (WNP) DPS, which is an endangered species under the ESA, the

Mexico DPS, which is a threatened species, and Hawaii DPS, which is not protected under the ESA. Whales from these three DPSs overlap to some extent on feeding grounds off Alaska.

Gear entanglements may debilitate, seriously injure, or kill humpback whales. Between 2014 to 2018, there was a mean annual mortality of 3.9 North Pacific humpbacks (western and central stocks) from commercial fisheries (Muto et al. 2021). There were no observed interactions specifically attributed to the BSAI sablefish pot fishery or Alaska jig fisheries and humpback whales from 2014 through 2018 (January 14, 2021, 86 FR 3028).

Wade et al. (2016) estimated the probability of encountering humpback whales from each DPS in the North Pacific Ocean in the Gulf of Alaska. Humpback whales from the endangered western North Pacific DPS are uncommon in the Gulf of Alaska, though critical habitat for them surrounds Kodiak Island.[77] An essential feature of critical habitat for humpback whales is prey which includes, euphausiids (*Thysanoessa* and *Euphuasia*) and small pelagic schooling fishes, such as Pacific herring (*Clupea pallasii*), capelin (*Mallotus villosus*), juvenile walleye pollock (*Gadus chalcogrammus*), and Pacific sand lance (*Ammodytes personatus*) (April 21, 2021 86 FR 21082). These prey items are not directly targeted by federal commercial fishing operation and would not be affected by this action. The threatened Mexico DPS has a higher probability of occurrence while humpback whales from the Hawaii DPS have the highest rates of occurrence in the GOA.

The 2010 FMP biological opinion (NMFS 2010) concluded that the number of entanglements that that might result from interactions with groundfish fisheries appears to be low in contrast to other gear types. And, for such events that do occur with individual whales, the extent of entanglement from groundfish fisheries is not expected to have negative consequences for humpback whales in the North Pacific (NMFS 2010).

It is not known to what extent fishing vessel traffic in the GOA results in humpback whale injury or mortality due to ship strikes. Vessels engaged in groundfish fisheries likely disturb whales and pose a higher risk of collision than those posed by baseline conditions. The risk of vessel collision is higher during the summer months when the population of humpback whales in Alaska is at its peak. Throughout the remainder of the year, the chance of collision is likely to be low given the limited occurrence of humpback whales. The incidence of ship strikes and/or serious injury from vessels involved in the groundfish fisheries are likely negligible, as fishing vessels usually operate at slow speeds and often spend their time in the pelagic environment rather than inside waters where humpbacks tend to forage.

Humpback whales may be disturbed by noise from fishing vessel engines. Research has suggested that noise may cause humpback whales to avoid or leave feeding or nursery areas. Other research has suggested that humpback whales may become habituated to vessel traffic and its associated noise. Still other researchers suggest that humpback whales may become more vulnerable to vessel strikes once they habituate to vessel traffic (NMFS 2010). In many cases, groundfish fishing vessels target different areas than those where humpback whales display high foraging site fidelity (e.g., Frederick Sound, Icy Strait, Lynn Canal, Kachemak Bay). Individual animals may experience disturbance by passing fishing vessels but is not expected to be of a magnitude to have significant impacts on the population in the GOA.

NMFS published its final List of Fisheries (LOF) for 2021, as required by the MMPA. The final LOF for 2021 reflects new information on interactions between commercial fisheries and marine mammals. NMFS must classify each commercial fishery on the LOF into one of three categories under the MMPA based upon the level of mortality and serious injury of marine mammals that occurs incidental to each fishery. The sablefish IFQ longline fishery is listed as a category III fishery in the 2021 List of Fisheries. Category III fisheries are fisheries determined to have a remote likelihood or no known incidental mortality and

[77] https://www.fisheries.noaa.gov/resource/map/humpback-whale-critical-habitat-maps-and-gis-data

serious injury of marine mammals. With the exception of the BSAI flatfish trawl, pollock trawl, and Pacific cod longline fisheries, all Federal groundfish fisheries in the BSAI and GOA are Category III fisheries in the 2021 LOF. Based on analogy of the BSAI sablefish IFQ pot fishery and other existing Federal pot fisheries in the GOA, the additional pot gear that may be on the fishing grounds under Alternative 2 (due to increases in the number or amount of time of pots are allowed on the grounds) is not likely to increase the risk of entanglements of humpback whales in the GOA relative to status quo. The number of humpbacks that have been entangled in recent years are as follows: 1 in BSAI commercial pot gear 2015, one in state commercial pot gear in 2017, and one in SE AK commercial pot gear 2015. There were no documented marine mammal interactions in the Bering Sea IFQ sablefish pot fishery or the BSAI Pacific cod pot fishery from 2008 through 2012 and one harbor seal mortality in the GOA Pacific cod pot fishery from 2008 through 2012 (81 FR 20550).

5.5.2 Effects on Marine Mammals

The significance criteria for analyzing the effects of the proposed action on marine mammals are shown in Table 5-11. Significantly beneficial impacts are not possible with the management of groundfish/IFQ fisheries as few, if any beneficial impacts to marine mammals are likely with groundfish harvest. Generally, changes to the fisheries do not benefit marine mammals in relation to incidental take, prey availability, and disturbances; changes increase or decrease potential adverse impacts. The only exception to this may be in instances when marine mammals target prey from fishing gear, as seen with killer whales and sperm whales removing fish from HAL gear, as was described thoroughly in Amendment 101 (NPFMC 2016). In this example, the prey availability is enhanced for these animals, because they need less energy for foraging. However, that benefit may be offset by adverse effect from an increased potential for entanglement in the gear or swallowing hooks.

Table 5-11 Criteria for determining significance of impacts to marine mammals.

	Incidental take / Entanglement in marine debris	Prey availability	Disturbance
Adverse impact	Mammals are taken incidentally to fishing operations or become entangled in marine debris.	Fisheries reduce the availability of marine mammal prey.	Fishing operations disturb marine mammals.
Beneficial impact	There is no beneficial impact.	Generally, there is no beneficial impacts, with the possible exception for certain net or HAL fisheries, of increased prey availability from removals from gear.	There is no beneficial impact.
Significantly adverse impact	Incidental take is more than PBR or is considered major in relation to estimated population when PBR is undefined.	Competition for key prey species likely to constrain foraging success of marine mammal species causing population decline.	Disturbance of mammal is such that population is likely to decrease.
Significantly beneficial impact	Not applicable	Not applicable	Not applicable
Unknown impact	Insufficient information available on take rates.	Insufficient information as to what constitutes a key area or important time of year.	Insufficient information as to what constitutes disturbance.

5.5.2.1 Alternative 1

Maintaining the current IFQ regulations listed in Section 2.1 is the status quo or action alternative. The analysis for GOA Amendment 101 analyzed impacts of the current GOA sablefish IFQ pot fishery and there would be no expected changes in incidental take, prey availability, or disturbance effects under Alternative 1. Therefore, effects of Alternative 1 are not likely to cause population level effects and are

therefore not significant. Continued requirements under Alternative 1 would not address the stated purpose and need for the action, which stresses the need to allow for operational efficiency in the IFQ fisheries.

5.5.2.2 Alternative 2

The only elements expected to have potential impacts on marine mammals under this alternative are Element 3 (jig gear) and Elements 5 and 6 (pot limits and gear retrieval in the GOA sablefish pot fishery). The potential impacts of these elements are explained below. Alternative 2 would not modify the action analyzed in the 2010 FMP biological opinion (NMFS 2010) in a manner that would cause effects to listed species or critical habitat that were not considered in the 2010 FMP biological opinion.

Effects of Element 1

The effects of Element 1, changes to the biodegradable panel, are considered in Section 5.2.1. There are no significant impacts to marine mammals expected as a result of Element 1.

Effects of Element 2

As described in Section 4.7.2 and 5.1.2, Element 2 would not change the number of vertical lines in the water, so Element 2 would not change the risk of entanglement from the status quo. Therefore, no significant impacts to marine mammals are expected as a result of Element 2 as noted in Section 5.1.2.

Effects of Element 3

Element 3, authorizing the use of jig gear for sablefish in the BSAI and GOA, is not likely to have any significant population-level impacts on marine mammals. Jig gear is already allowed for other groundfish and for halibut in these areas, and the BSAI groundfish jig, GOA groundfish jig, and AK halibut jig gear fisheries are all listed as Category III fisheries in the List of Fisheries (LOF) as of 2021. The only documented interaction that resulted in incidental mortality or serious injury of marine mammals was with a fin whale in the GOA groundfish jig fishery which was actually an interaction with the vessels anchor line and was not ultimately attributed to the fishery. Therefore, no documented interactions resulting in incidental mortality or serious injury have occurred since 2007 (Delean et al. 2020, Helker et al. 2015 & Allen et al. 2014). One entanglement of a humpback whale occurred in the ground tackle of a commercial Pacific cod jig fishery vessel in Kodiak Alaska in 2013 (Muto et al. 2016).
One entanglement of a humpback whale occurred in the ground tackle of a commercial Pacific cod jig fishery vessel in Kodiak Alaska in 2013 (Muto et al. 2016). As described in Section 4.7.3, any increase in vessels using jig gear is likely to be minimal and a result of displaced effort from another sablefish gear type (HAL or pots). Therefore, it is expected that there would be no meaningful change in the likelihood of entanglement.

At the time of the analysis, it is not clear whether jig gear is susceptible to whale depredation. The analysts are not aware of any occurrences of whale depredation in Alaska jig fisheries, however it is unclear whether an increase in the use of this gear type (while likely to be minimal) would result in an additional increase in depredation. It is unclear whether jig gear would be fished in areas where whale depredation is more frequent. If so, allowing jig gear for sablefish could potentially contradict the purpose and need described for GOA Amendment 101 and BSAI Amendment 118.

Alternative 2, Element 3 would establish a new fishery for purposes of the MMPA LOF. Should NMFS approve and implement Alternative 2, NMFS would include the GOA and BSAI sablefish IFQ/CDQ jig fishery as a fishery in the annual LOF in the future and determine the fishery category based on the level of mortality and serious injury of marine mammals in the fishery. Because this fishery has not yet commenced, there would be no factual basis for making a category determination prior to

implementation, other than by speculation or analogy to like gear. If new information in the future reveals that the effects of a sablefish IFQ/CDQ jig fishery may affect listed species or critical habitat in a manner not considered in prior biological opinions, or if there is incidental take of a humpback whale in the fishery, NMFS would reinitiate ESA section 7 consultation to ensure the effects of the fishery are not likely to jeopardize the continued existence of any ESA-listed humpback whale DPSs.

Effects of Element 4

The only expected impacts on marine mammals as a result of Element 4 would be indirect impacts due to a redistribution of fishing effort from the halibut HAL fishery to a halibut pot fishery. If more fishery participants find that using pot gear is a more effective way to harvest halibut IFQ in the GOA as a result of this action, any decrease in depredation could minimize the possibility of marine mammal entanglement in HAL gear. This could decrease likelihood of disturbance or incidental take. There are no significant population-level impacts on marine mammals expected as a result of Element 4.

Effects of Elements 5 and 6

Alternative 2, Elements 5 and 6 would change pot limits and gear retrieval requirements in the GOA sablefish pot fishery. NPFMC 2016 analyzed the potential impacts of the GOA sablefish pot fishery on marine mammals and the impact of shifts in effort from HAL to pot gear. Any of the additional flexibilities provided by this action could incentivize more fishermen in the GOA to use pot gear to harvest halibut, though it is unlikely any shift in direct response to this action would be significant (described in Sections 4.7.4 and 5.2.2). Any redistribution of effort from HAL to pot gear could reduce whale depredation of halibut and sablefish on HAL gear, which would decrease prey availability, but could also reduce the potential for whale entanglements with HAL gear.

Impacts to marine mammals as a result of Elements 5 and 6 are mostly dependent upon the number of lines in the water. Additional lines in the water could increase likelihood of entanglement. If IFQ fishermen choose to increase the amount of gear on the grounds (due to an increase in pot limits, Element 5), or the amount of time gear is on the grounds (change in gear retrieval requirements, Element 6) as a result of this action, this could increase the potential for entanglement as compared to status quo. However, some fishery participants have explained that Elements 5 and 6 may result in a smaller fishery footprint, described in Section 4.7.5. The increased operational flexibility afforded through these elements may enable harvesters to more efficiently set gear, fish, and clear gear from the grounds under this action, though this may likely differ by vessel and operation. Any reduction in the number of lines in the water or amount of time gear is in the water could reduce potential for entanglement.

No information in this analysis suggests that a temporal or seasonal shift in sablefish IFQ fishing is expected to occur under Alternative 2. In fact, as with Amendment 101, a return to traditional fishing patterns might be expected, as shifts in fishing patterns to avoid whales would be discontinued by those fishermen who switch to longline pot gear. If further IFQ fishery participants switch to pot gear due to flexibilities afforded through this action, there will likely be decreased interactions between killer whales and sperm whales and the IFQ fisheries. In this way, the action could lead to fewer disturbances and reduced likelihood of entanglements.

Considering the potentially affected environment and the degree of the effects of the proposed alternatives when added to the impacts of past and present actions previously analyzed in other documents that are incorporated by reference, the expected impacts of the proposed alternatives on marine mammals are considered to be not significant.

5.6 NEPA Summary

One of the purposes of an environmental assessment is to provide the evidence and analysis necessary to decide whether an agency must prepare an environmental impact statement (EIS). The Finding of No Significant Impact (FONSI) is the decision maker's determination that the action will not result in significant impacts to the human environment, and therefore, further analysis in an EIS is not needed. The Council on Environmental Quality regulations at 40 CFR 1508.27 state that the significance of an action should be analyzed both in terms of "context" and "intensity." An action must be evaluated at different spatial scales and settings to determine the context of the action. Intensity is evaluated with respect to the nature of impacts and the resources or environmental components affected by the action. These factors form the basis of the analysis presented in this Environmental Assessment/Regulatory Impact Review. The results of that analysis are summarized here for those criteria.

Context: This Environmental Assessment analyzes several proposed management measures that would apply to fishery participants in the halibut and sablefish individual fishing quota (IFQ) fisheries off Alaska.

Intensity: Considerations to determine intensity of the impacts are set forth in 40 CFR 1508.27(b). Each consideration is addressed below in order as it appears in the NMFS Instruction 30-124-1 dated July 22, 2005, Guidelines for Preparation of a FONSI. The sections of the EA or RIR that address the considerations are identified.

1) Can the proposed action reasonably be expected to cause both beneficial and adverse impacts that overall may result in a significant effect, even if the effect will be beneficial?

   Response: *No. As described in Section 5, the proposed action affects commercial fishing in the waters of the GOA and BSAI. It is not likely to significantly affect public health or safety, unique characteristics of the geographic area, or any of the places listed in Question number 8. The proposed action's effects on the human environment are not likely to be highly uncertain or involve unique or unknown risks, nor are they expected to be controversial. The action is not precedent setting, nor are the impacts of the proposed alternatives determined to be cumulatively significant. The proposed action is not expected to have effects on endangered or threatened species or habitats, vulnerable ecosystems, ecosystem functioning, or fish stocks due to harvest limits and habitat protections that currently exist in regulation. These would not be changed by any of the alternatives. This action will not affect the introduction or spread of non-indigenous species.*

2) Can the proposed action reasonably be expected to significantly affect public health or safety?

   Response: *Public health and safety are not expected to be significantly affected by the proposed changes to IFQ Program regulations. The use of jig gear or pot gear has not been shown to have any effects on public health in general. If anything, this action would allow vessels to have less gear aboard vessels, which could improve vessel stability and safety. Section 4.7.7 details potential impacts on vessel safety.*

3) Can the proposed action reasonably be expected to result in significant impacts to unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?

   Response: *No. This action affects commercial fishing in the offshore waters of the GOA and BSAI, it will not impact any historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.*

4) Are the proposed action's effects on the quality of the human environment likely to be highly controversial?

   Response: *Most elements of the proposed action are not controversial. Elements 5 and 6, pot limits and gear retrieval requirements, are mildly controversial due to potential for grounds preemption and gear conflicts between fishermen using pot gear and the HAL fleet, as described in RIR Section 4.7.5. No other controversy was noted in public comments to the Council or NMFS about the data and information used to evaluate the impacts of the action on the human environment. The proposed action removes a restriction on pot gear use and provides a voluntary opportunity to use additional flexibilities in terms of gear specifications in the GOA and BSAI IFQ fisheries. The proposed action also temporarily removes a residency requirement for those wishing to use CQE-held IFQ.*

5) Are the proposed action's effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

   Response: *The effects on the human environment from the proposed changes to IFQ Program regulations are not expected to be highly uncertain or involve unique or unknown risk. Pot gear and jig gear are already used in other fisheries in the GOA and BSAI. The effects of the proposed action are clearly detailed and thoroughly analyzed in EA Section 5 and RIR Section 4.*

6) Can the proposed action reasonably be expected to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?

   Response: *No. The proposed action removes a restriction on pot gear use and provides a voluntary opportunity to use additional flexibilities in terms of gear specifications in the GOA and BSAI IFQ fisheries. The proposed action also temporarily removes a residency requirement for those wishing to use CQE-held IFQ. This action does not establish a precedent for future action with significant effects because the sablefish and halibut quota in the IFQ Program is already fully allocated and additional participation is expected to be limited. Pursuant to NEPA, for all future amendments to the FMPs, appropriate environmental analysis documents will be prepared to inform the decision makers of potential impacts to the human environment and to implement mitigation measures to avoid significant adverse impacts (Section 5)*

7) Is the proposed action related to other actions that when considered together will have individually insignificant but cumulatively significant impacts?

   Response: *As demonstrated through the analyses in Section 5, no past, present, or reasonably foreseeable future actions were identified that would combine with the effects of this action to result in cumulatively significant impacts.*

8) Can the proposed action reasonably be expected to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources?

   Response: *No. Because this action affects commercial fishing in the offshore waters of the GOA and BSAI, it will not impact any districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources. Compliance with proposed changes to IFQ Program regulations is not likely to result in the permanent loss or destruction of, or impact to, any historic, scientific, cultural, or historical resources.*

9) Can the proposed action reasonably be expected to have a significant impact on endangered or threatened species, or their critical habitat as defined under the Endangered Species Act of 1973?

   Response: *This action is not expected to change existing conditions for the North Pacific right whale, sperm whale, humpback whale, or designated critical habitat beyond what has already been considered for this fishery or similar fisheries. The action is not expected to result in population-level impacts to any of the stocks included in the action area. No effects on other ESA-listed species or designated habitat are expected as a result of this action. This is further discussed in EA Section 5, specifically Section 5.5.2.*

10) Can the proposed action reasonably be expected to threaten a violation of Federal, state, or local law or requirements imposed for environmental protection?

   Response: *No. This action does not create any known violation of a Federal, State, or local laws or requirements imposed for the protection of the environment.*

11) Can the proposed action reasonably be expected to adversely affect stocks of marine mammals as defined in the Marine Mammal Protection Act?

   Response: *No. Expected impacts of the proposed alternatives on marine mammals are considered to be not significant. NMFS has determined that fishing activities conducted under this rule will have negligible adverse impacts on marine mammals. The harvest of IFQ sablefish and halibut would continue to occur within the limits established in the annual halibut management measures by vessels the same as or similar to those currently fishing for halibut in the GOA or BSAI. A potential impact could be changes in the likelihood of whale entanglement, which could increase or decrease dependent upon fishing behavior, but NMFS expects the change to be minimal with respect to status quo. (EA Section 5.5.2)*

12) Can the proposed action reasonably be expected to adversely affect managed fish species?

   Response: *No. The proposed action would continue conservation and management of halibut, sablefish, and incidental catch species under the current harvest specifications process and inseason management authority. There are no proposed management measures that would modify established prohibited species catch limits under either the status quo or action alternatives. More detail on the effects of the action on target, non-target, and PSC species is included in Sections 5.3 and 5.4.*

13) Can the proposed action reasonably be expected to adversely affect essential fish habitat as defined under the Magnuson-Stevens Fishery Conservation and Management Act?

   Response: *No. As described in Section 5.1.2, none of the alternatives would significantly change when or where the fishery operates and impacts of existing gear types on habitat have been analyzed. The Groundfish PSEIS (NMFS 2004) contains a discussion of the effects of fishing, including pot and jig, gear on habitat. The effects of current fishing regulations on habitat have been described in previous documents (Section 5.1.1). The 2005 EFH FEIS, 2010 EFH Review, and 2015 EFH Review concluded that current fishery regulations do not have long-term effects on habitat, and any expected impacts are determined to be minimal and not detrimental to fish populations or their habitats (NMFS 2017). If new information emerges to indicate that pot gear or jig gear used in the IFQ fisheries are having more than a minimal impact on EFH, the Council may consider additional habitat conservation measures.*

14) Can the proposed action reasonably be expected to adversely affect vulnerable marine or coastal ecosystems, including but not limited to, deep coral ecosystems?

Response: *No. An evaluation of the effects of the GOA and BSAI groundfish fisheries on the ecosystem is discussed annually in the Ecosystem Considerations sections of each chapter of the SAFE report (NPFMC 2021c). These considerations are summarized according to the ecosystem effects on the groundfish fisheries, as well as the potential fishery effects on the ecosystem.*

15) Can the proposed action reasonably be expected to adversely affect biodiversity or ecosystem functioning (e.g., benthic productivity, predator-prey relationships, etc.)?

Response: *No, the proposed action is not expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships).*

16) Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

Response: *No. This action will not affect the introduction or spread of non-indigenous species, because it does not change fishing practices that may introduce such organisms into the marine environment.*

6 Consistency with Applicable Law and Policy

These sections will be revised accordingly once the Council selects a preferred alternative.

6.1 Magnuson-Stevens Act National Standards

Below are the 10 National Standards as contained in the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). In recommending a preferred alternative, the Council must consider how to balance the national standards. This section will be updated when the Council selects a preferred alternative.

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.

> Each of the proposed alternatives would continue conservation and management of groundfish fisheries under the current harvest specifications process and inseason management authority to prevent overfishing and achieve, on a continuing basis, the optimum yield from each fishery. The sablefish IFQ fishery is an under-utilized fishery, and under Alternative 2, the Council is considering options that would increase operational efficiency for vessels harvesting sablefish IFQ and authorize the use of jig gear to harvest sablefish IFQ/CDQ in the GOA and BSAI. Additionally, under Alternative 3, the Council is considering allowing an exemption to residency requirements for the Adak CQE, which would allow increased flexibilities for those who fish CQE-held IFQ to harvest sablefish.

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

> The information in this analysis represents the most current, comprehensive information available to the Council. Specific information on the impacts of changes to the biodegradable panel and tunnel openings on catch composition are analyzed to the extent they can be given limited scientific information.
>
> The action alternative also has the potential to mitigate a source of scientific uncertainty in assessing the abundance of halibut and sablefish stocks. As described in Section 5.3.1, incidental mortality of halibut due to whale depredation is not explicitly accounted for in stock assessment models because a time series of total annual whale depredation does not exist. Additionally, some of this depredation of HAL gear may go unobserved, and thus this source of removals is not directly included in the halibut stock assessment. The action alternative could help to reduce the amount of unaccounted sablefish and halibut mortality, to the extent that fishermen use the flexibilities afforded through this action and continue to adopt pot gear for a proportion or all of their IFQ harvest. As a result, the information available for future conservation and management measures would be marginally improved.

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.

> Nothing in this action would change the manner in which individual stocks are managed as a unit throughout their range, and interrelated stocks are managed as a unit or in close coordination.

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.

Alternative 3 considers an exemption to residency requirements for those fishing with IFQ held by the Adak CQE. Section 4.5.3 includes a summary of applicable aspects of the CQE Program, which qualifies eligible remote, coastal communities in Alaska to lease IFQ out to eligible residents. Those that have been excluded from participation in the CQE Program include both Alaskan and non-Alaskan communities, so this action is not predicated upon any effort to discriminate between residents of different states.

The remaining aspects of the proposed alternatives treat all vessel owners and quota shareholders the same regardless of residency. Residents of various states, including Alaska and the states of the Pacific Northwest, participate in the major sectors affected by the proposed action, including both groundfish and halibut fisheries. The proposed alternatives would be implemented without discrimination among participants. The rest of the alternatives would not directly affect the allocation of fishing privileges, and thus cannot be said to directly create excessive shares. Existing limits on excessive share accumulation would not be altered by the proposed action alternative.

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.

Relative to the status quo, the Alternative 2 considers efficiency. Alternative 2 provides greater flexibility for IFQ/CDQ participants; allowing the fleet options to configure and set gear in a way they deem most efficient for their operations. The Council's objective of increasing operational efficiency, reduce administrative burden, and clarify how harvesters can meet existing regulatory requirements are not allocative in nature, so the considered management measure cannot be said to be creating any economic allocation. Alternative 3 would provide more opportunities for the Adak CQE to more fully harvesting its allocation.

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

Neither of the proposed alternatives would alter the underlying management of the GOA BSAI fisheries, which are structured to allow for variations in the fishery, resources, and available catch. Use of pots in the IFQ fisheries (in response to whale depredation) is a relatively new type of operation, with gear continuing to develop as harvesters become more experienced. The increasing frequency of whale depredation is, itself, an emerging contingency, and the Alternative 2 seeks to account for a change in both the natural environment and developing gear technologies by offering the fleet flexibility in the form of gear options. Alternative 3 would offer more flexibility for the Adak CQE to harvest IFQ, in response to changes in the fishing community.

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

The no action alternative would not generate any cost or unnecessary duplication, as it would maintain the status quo. The action alternatives would not directly increase costs, as they merely provide the fleet with further flexibility to use different gear configurations to increase operational efficiency, improve ability to target certain species, and (Alternative 3) allow increased flexibility for the Adak CQE to harvest its IFQ. In fact, the action alternative could increase CPUE and indirectly help to limit the costs associated with whale avoidance measures. Neither action alternative is duplicative of any existing management measures.

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 alternatives take into account the importance of groundfish and halibut resources of the GOA and BSAI. Income generated by QS holders, vessel owners, skippers and crew can induce impacts through a community where these individuals live and spend money, and increased efficiency can lower operational costs and increase CPUE for harvesters. Section 4.7.5 explains how Alternative 2 could change the likelihood of gear conflicts and grounds preemption issues in the GOA. To the extent that there are costs associated with grounds preemption and gear conflicts for vessels that do not use pot gear, this could yield indirect adverse impacts. This alternative is structured in a manner that seeks to minimize disadvantages to fishery participants who choose not to switch from HAL to pot gear. Section 4.8 explains how Alternative 3 seeks to provide for the sustained participation of Adak, the community referred to in the Council's purpose and need statement.

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.

Under the no action alternative, there are no expected changes in bycatch from the status quo. Alternative 2 Element 1, would provide IFQ harvesters flexibility to make a specific change to the biodegradable panel. The main purpose of the biodegradable panel is to minimize impacts of ghostfishing. Section 5.2.1 explains that the efficacy of the current biodegradable panel is not well understood, but using the best available information, any changes to bycatch due to Element 1 are not expected to be significantly different.

Alternative 2, Element 3 would authorize jig gear as a legal gear type for sablefish IFQ. As explain in Section 4.7.3 explain how effort in a sablefish jig fishery would be expected to be minimal as result of this action, and Section 5.4.2.2 explains that while any shift from other gear types to jig gear could minimally alter composition, the selective nature of jig gear is not likely to have significant impacts on incidental catch species.

Alternative 2 Element 4 would allow vessels to use pots with a larger tunnel opening if they possess the appropriate halibut or sablefish IFQ. Vessels are required to retain all legal-sized fish for which they have the appropriate IFQ, which helps to minimize bycatch.

Alternative 3 is not expected to have any impact on bycatch, as it is a purely allocative issue and would not make any changes to existing gear types, fishing patterns or seasons, or inseason management authority to manage incidental catch.

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

The no action alternative is consistent with this standard, as safety of human life at sea is considered in the existing fishery management plans and federal regulations that governs the GOA and BSAI groundfish and IFQ fisheries. Alternative 2, Element 2 would eliminate requirements for vessels using pots to fish sablefish IFQ in the GOA to carry and deploy additional gear. This is further described in Section 4.7.2.

6.2 Pacific Halibut Act Considerations

The fisheries for Pacific halibut are governed under the authority of the Northern Pacific Halibut Act of 1982 (Halibut Act, 16 U.S.C. 773-773k). For the United States, the Halibut Act gives effect to the Convention between the United States and Canada for the Preservation of the Halibut Fishery of the North Pacific Ocean and Bering Sea. The Halibut Act also provides authority to the Regional Fishery Management Councils, as described in §773c©:

> *The Regional Fishery Management Council having authority for the geographic area concerned may develop regulations governing the United States portion of Convention waters, including limited access regulations, applicable to nationals or vessels of the United States, or both, which are in addition to, and not in conflict with regulations adopted by the International Pacific Halibut Commission. Such regulations shall only be implemented with the approval of the Secretary, shall not discriminate between residents of different States, and shall be consistent with the limited entry criteria set forth in section 303(b)(6) of this title. If it becomes necessary to allocate or assign halibut fishing privileges among various United States fishermen, such allocation shall be fair and equitable to all such fishermen, based upon the rights and obligations in existing Federal law, reasonably calculated to promote conservation, and carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of the halibut fishing privileges. Provided, That the Regional Council may provide for the rural coastal villages of Alaska the opportunity to establish a commercial halibut fishery in areas in the Bering Sea to the north of 56 degrees north latitude during a 3-year development period.*

The Halibut Act states that the Council may develop regulations to govern the fishery, provided that the Council's actions are in addition to, and not in conflict with, regulations adopted by the International Pacific Halibut Commission (IPHC). It is necessary for the Council to consider the directions in the Halibut Act about the regulations that may result from this action. Much of the direction listed in §773c© is similar to the Magnuson-Stevens Act's National Standard 4, as it requires that regulations not discriminate between residents of different States, and directs that if halibut fishing privileges are allocated or assigned among fishermen, such allocation shall be fair and equitable.

The flexibility provided through Alternative 2 and Alternative 3 is consistent with limited entry criteria set forth in Section 303(b)(6) of the Halibut Act. This action would not create a new limited access program, but would amend current IFQ Program regulations for halibut. Regulatory caps in place in the IFQ Program would still apply to those holdings under any alternative, continuing to limit individuals, corporations, or other entities from acquiring an excessive share of harvesting privileges.

Section 4.5 includes a brief summary and associated references on the commercial halibut IFQ fishery and allocation under the IFQ and CDQ Programs. Section 4.5.3 includes a summary of applicable aspects of the CQE Program, which qualifies eligible remote, coastal communities in Alaska to lease IFQ out to eligible residents. Those that have been excluded from participation in the CQE Program include both Alaskan and non-Alaskan communities, so this action is not predicated upon any effort to discriminate between residents of different states.

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

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

The 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 the RIR Section 4. The effects of the proposed action on safety of human life at sea are evaluated in Section 4.7.7. Based on the information reported in this section, there is no need to update the Fishery Impact Statement included in the FMP.

The proposed action affects the IFQ 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.

6.4 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 take into account 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.

In considering this action, the Council is being consistent with its ecosystem approach policy. This action increases flexibility in the IFQ/CDQ fisheries to allow for harvesters to adapt to

changes within the fishery, markets, and the environment. Reflecting the Council's intent to be adaptive to changes in the ecosystem, this action allows fishermen to adapt gear and operations to increase harvesting efficiency, either through changes to pot gear or authorizing a new gear type (jig) for sablefish IFQ/CDQ. This action also may help minimize unaccounted halibut discard mortality due to whale depredation, which is directly supportive of the Council's intent to provide best data possible for scientists, managers, and the public in order to ensure sustainable fisheries for managed species and their effects on associated ecosystem components.

7 Preparers and Persons Consulted

Preparers

Sara Cleaver, NPFMC
Abby Jahn, NMFS SF
Angela Forristall, NPFMC/ AK Sea Grant (former)

Contributors

Michael Fey, AKFIN
Alicia M. Miller, NMFS SF
Jane Sullivan, NMFS AFSC ABL

Persons *(and Agencies)* Consulted

Diana Evans, NPFMC
Tom Meyer, NOAA GC
Jedediah Raskie, USCG
Nathan Lagerway, NMFS OLE
Benjamin Cheeseman, NMFS OLE
Brent Pristas, NMFS OLE
Bridget Mansfield, NMFS SF
Stephanie Warpinski, NMFS SF
Josh Keaton, NMFS SF
Kelly Cates, NMFS SF
Jennifer Mondragon, NMFS SF
Erik Velsko
Bernie Burkholder
Paul Clampitt
Tad Fujioka
Linda Behnken
Darius Kasprzak
Mary Nelson
Dave Fraser

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