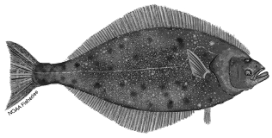
Sablefish and Halibut Individual Fishing Quota Program Review

Council Review Draft



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Abbreviations

ADFG	Alaska Department of Fish and Game
AKFIN	Alaska Fisheries Information Network
BSAI	Bering Sea and Aleutian Islands
CDQ	Community Development Quota
CFID	Commercial Fishing Incident Database
CQE	Community Quota Entity
CSP	Catch Sharing Plan
EM	Electronic monitoring
FMP	Fishery Management Plan
GOA	Gulf of Alaska
IFQ	Individual fishing quota
IPHC	International Pacific Halibut Commission
LAPP	Limited Access Privilege Program
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NIOSH	National Institute for Occupational Safety and Health
NMFS	National Marine Fisheries Service (NOAA Fisheries)
OFL	Overfishing level
QS	Quota share
RAM	Restricted Access Management
RQE	Recreational Quota Entity
TEC	Transfer Eligibility Certificate
VMS	Vessel Monitoring System

1 Background

1.1 Introduction and Overview

The purpose of this second review of the Pacific Halibut and Sablefish Individual Fishing Quota Management Program (IFQ Program) is to evaluate the progress of the program in meeting its management goals since publication of the first review in 2016 (NPFMC and NMFS 2016). The period covered during the first review was from program inception (1995) to 2015; the current review primarily covers the period from 2016 to 2023. Hereafter, the first review is referred to as the 2016 IFQ Program Review or previous review, while this update is referred to as the 2024 IFQ Program Review or current review.

In general, the outline of the current review mirrors that of the previous review in order to provide continuity and comparability. The review is organized in sections as follows:

- Purpose and Need of the Review (Section 1.1.1)
- Program Goals and Objectives (Section 1.1.2)
- History and Development of the Program (Section 1.2)
- Program Performance and Review (Section 2)
- Summary and Conclusions of the Review (Section 3)
- References (Section 4)

1.1.1 Purpose and Need of the Review

Per the *Guidance for Conducting Review of Catch Share Programs* (NMFS 2017), the current review focuses on describing changes in the biological, ecological/environmental, economic, social, and administrative conditions in the Pacific halibut and sablefish fisheries since the first review was published in 2016. In general, the analysis does not discuss conditions prior to implementation of the program, although some program impacts are analyzed over the entire IFQ period (1995–2023) in relation to the pre-IFQ program baseline (1992–1994), primarily if the impact analysis is unique to the current review.

1.1.1.1 Requirements for Reviews

The 2007 reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) contained new requirements related to the monitoring and review of limited access privilege programs (LAPPs), including IFQ programs. The term "limited access privilege" is defined as a federal permit to harvest a quantity of fish representing a portion of the total allowable catch of the fishery.

The MSA requires that periodic formal and detailed reviews be conducted to assess whether a LAPP is meeting management goals. Specifically, Section 303A(c)(1)(G) of the MSA states the following:

> MSA 303A(c) Requirements for Limited Access Privilege Programs (1) IN GENERAL (G) include provisions for the regular monitoring and review by the Council and the Secretary of the operations of the program, including determining progress in meeting the goals of the program and this Act, and any necessary modification of the program to meet those goals, with a formal and detailed review 5 years after the implementation of the program and thereafter to coincide with scheduled Council review of the relevant fishery management plan [FMP] (but no less frequently than once every 7 years).

In 2016, when the previous review was published, NMFS was in the process of developing guidance for conducting reviews of LAPPs in coordination with all regional fishery management councils. The *Guidance for Conducting Review of Catch Share Programs* (NMFS 2017) was completed in the following year. According to the guidance, a LAPP review should contain the following elements:

1) Purpose and need of the review (discuss legal/policy requirements);
2) Goals and objectives of the program and the MSA;
3) History of management, including a description of management prior to the program's implementation, a description of the program at the time of implementation (including enforcement, data collection, and monitoring), and any changes made since the program's implementation or the previous review;
4) Description of biological, ecological/environmental, economic, social, and administrative environments before and since the program's implementation;
5) Analysis of the program's biological, ecological/environmental, economic, social, and administrative effects;
6) Evaluation of those effects with respect to meeting the goals and objectives (i.e., program performance), including a summary of the conclusions arising from the evaluation;
7) A summary of any unexpected effects (positive or negative) which do not fall under the program's goals and objectives, and
8) Identification of issues associated with the program's structure or function and the potential need for additional data collection and/or research.

In addition, the guidance states that within the assessment of the LAPP's performance, it must describe and analyze the following key areas: A) goals and objectives, B) allocations, C) eligibility, D) transferability, E) catch and sustainability, F) accumulation limits/caps, G) cost recovery, H) data

collection/reporting, monitoring, and enforcement, I) duration, J) new entrants, and K) auctions and royalties. Finally, the guidance also requires that a review contain an assessment of the program's effects on net benefits to the Nation, including net benefits that are not exclusively economic in nature.

Table 1 describes where each element and key area is addressed in the analysis conducted for this review. The regulatory provisions of the IFQ Program corresponding to these program goals and outcomes, required elements, and key areas are described in detail in Section 1.2.4.

Table 1. Sections Where Required LAPP Review Elements and Program Performance Key Areas Are Addressed

Element/Key Area	Section
Elements of a LAPP Review	
Purpose and need	Section 1.1.1
Goals and objectives	Section 1.1.2
History of management	Section 1.2.3
Description of biological, ecological/environmental, economic, social, and administrative environments	The final EIS for the IFQ Program provides a description of biological, ecological/environmental, economic, social, and administrative environments before program implementation (NPFMC and NMFS 1992). A description of changes in these environments after program implementation, with a focus on changes since the previous review, are presented in Section 2.
Analysis of the program's biological, ecological/environmental, economic, social, and administrative effects	Section 2
Evaluation of above effects with respect to meeting the goals and objectives	Section 3.1
Unexpected effects	Section 3.4
Identified Issues and Areas for Future Research	Section 3.5
Program Goals and Objectives	
Address the problems that occurred with the open-access management regime to include 1) allocation conflicts, 2) gear conflicts, 3) dead loss from lost gear, 4) bycatch loss, 5) discard mortality, 6) excess harvesting capacity, 7) product wholesomeness, 8) safety, 9) economic stability in the fisheries and communities, and 10) rural coastal community development of a small boat fleet.	Allocation conflicts (Section 2.4.3.2) Gear conflicts (Section 2.4.3.1) Dead loss from lost gear (Section 2.11.1.1 and Section 2.11.2.1) Bycatch loss (Section 2.11.1.1 and Section 2.11.2.1) Discard mortality (Section 2.11.1.1 and Section 2.11.2.1) Excess harvesting capacity (Section 2.4.2) Product wholesomeness (Section 2.4.4) Safety (Section 2.10) Economic stability in the fisheries and communities (Section 2.9) Rural coastal community development of a small boat fleet (Section 2.4.5 and Section 2.9)
Link the initial quota share allocations to recent dependence on the halibut and sablefish fixed gear fisheries.	Section 2.3
Broadly distribute QS to prevent excessively large QS holdings.	Section 2.3 and Section 2.4.6
Maintain the diversity in the fleet with respect to vessel categories.	Section 2.4.5

Element/Key Area	Section
Maintain the existing business relationships among vessel owners, crews, and processors.	Section 2.5 and Section 2.6
Assure that those directly involved in the fishery benefit from the IFQ Program by assuring that these two fisheries are dominated by owner/operator operations.	Section 2.7
Limit the concentration of QS ownership and IFQ usage that will occur over time.	Section 2.4.6 and Section 2.6.2
Limit the adjustment cost to current participants including Alaska coastal communities.	Section 2.9
Increase the ability of rural coastal communities adjacent to the BSAI to share in the wealth generated by the IFQ Program.	The 2016 IFQ Program Review noted that this objective relates to the implementation of the CDQ Program, and because the CDQ Program is a separate management program, it is not examined as part of the IFQ Program.
Achieve previously stated Council goals and objectives and meet MSA requirements	Although not expressly addressed in the analysis and key findings, this objective is woven in throughout Section 2.
Other Program Performance Key Areas	
Allocations	Section 1.2.4.2, Section 2.4, and Section 3.2.1
Eligibility	Section 1.2.4.2
Transferability	Section 1.2.4.4 and Section 2.8
Catch and sustainability	Section 1.2.4.1, Section 2.2, and Section 2.11
Accumulation limits/caps	Section 1.2.4.3 and Section 2.4.6
Cost recovery	Section 2.12.4
Data collection/reporting, monitoring, and enforcement	Section 2.12.2 and Section 2.12.3
Duration	Section 3.2.2
New entrants	Section 2.8
Auctions and royalties	Section 3.2.3
Net Benefits to the Nation	Section 3.3

1.1.2 Program Goals and Objectives

The IFQ Program was developed in response to the race-for-fish under the previous the open-access and effort control management regime of the halibut and sablefish fisheries. In particular, the race-to-fish had generated several issues in the fisheries, including overcapacity, reduced product quality, fishery conflicts, negative biological impacts on target stocks, and unintended inequities of benefits and costs. As outlined in the final EIS for the IFQ Program (NPFMC and NMFS 1992), the objectives of the program are as follows:

1. Address the problems that occurred with the open-access management regime. The Council identified 10 specific problems: Allocation conflicts, gear conflicts, deadloss from lost gear, bycatch loss, discard mortality, excess harvesting capacity, product wholesomeness, safety, economic stability in the fisheries and communities, and rural coastal community development of a small boat fleet.

2. Link the initial QS allocations to recent dependence on the halibut and sablefish fixed gear fisheries.

3. Broadly distribute QS to prevent excessively large QS from being given to some persons.
4. Maintain the diversity in the fleet with respect to vessel categories.
5. Maintain the existing business relationships among vessel owners, crews, and processors.
6. Assure that those directly involved in the fishery benefit from the IFQ Program by assuring that these two fisheries are dominated by owner/operator operations
7. Limit the concentration of quota share ownership and IFQ usage that will occur over time.
8. Limit the adjustment costs to current participants including Alaskan coastal communities.
9. Increase the ability of rural coastal communities adjacent to the Bering Sea and Aleutian Islands to share in the wealth generated by the IFQ Program
10. Achieve previously stated Council goals and objectives and meet MSA requirements

1.1.3 FMP Amendments, Regulatory Amendments, and Emergency Orders Since Previous Review

Since the 2016 IFQ Program Review was published the Council and NMFS have approved several changes to the regulations of the IFQ Program. The changes as of July 26, 2023—which are listed below—are a focus area within the current review and, to the extent that data are available, the effects of these more recent regulatory changes are assessed.

1.1.3.1 Authorize Use of Pots in the Sablefish IFQ Fishery

On December 28, 2016, NMFS issued regulations to implement Amendment 101 to the Fishery Management Plan for Groundfish of the Gulf of Alaska (GOA FMP) for the sablefish IFQ fisheries in the Gulf of Alaska (GOA) (81 FR 95435). This final rule authorized the use of longline pot gear in the GOA sablefish IFQ fishery. In addition, this final rule established management measures to minimize potential conflicts between hook-and-line and longline pot gear used in the sablefish IFQ fisheries in the GOA. This final rule also included regulations developed under the Northern Pacific Halibut Act of 1982 (Halibut Act) to authorize harvest of halibut IFQ caught incidentally in longline pot gear used in the GOA sablefish IFQ fishery. This final rule is necessary to improve efficiency and provide economic benefits for the sablefish IFQ fleet and minimize potential fishery interactions with whales and seabirds. This action is intended to promote the goals and objectives of the MSA, Halibut Act, GOA FMP, and other applicable laws.

An assessment of the use of pot gear in the sablefish fishery is provided in Section 2.4.5.6. Since 2017, pot gear use has increased dramatically, and in 2022 more than 82% of all landings in the sablefish IFQ fishery used pot gear.

1.1.3.2 Authorize Formation of Recreational Quota Entities

On September 21, 2018, NMFS issued regulations that were effective on October 18, 2018, and which authorized formation of a recreational quota entity (RQE) that could participate in the IFQ Program in International Pacific Halibut Commission Regulatory Areas 2C and 3A in the Gulf of Alaska (83 FR 47819). The RQE is authorized to purchase and hold a limited amount of commercial halibut quota share that will yield additional pounds of recreational fishing quota on an annual basis to augment the amount of halibut available for harvest in the charter halibut fishery. The RQE provides a mechanism for a compensated reallocation of a portion of commercial halibut quota share to the charter halibut fishery. This final rule is necessary to promote social and economic flexibility in the charter halibut fishery and is intended to promote the goals and objectives of the Northern Pacific Halibut Act of 1982 (Halibut Act), and other applicable laws.

1.1.3.3 Allow CDQ Groups to Lease; Remove Obsolete Regulatory Language; and Clarify Vessel Use Caps

On October 18, 2018, NMFS issued a final rule that came into effect on November 19, 2018 (83 FR 52760). The rule includes three actions:

1) Allows Western Alaska Community Development Quota (CDQ) groups to lease (to receive by transfer) halibut IFQ in IFQ regulatory areas 4B, 4C, and 4D in years of extremely low halibut commercial catch limits. This action is necessary to provide additional harvest opportunities to CDQ groups and community residents and provide IFQ holders with the opportunity to receive value for their IFQ when the halibut commercial catch limits may not be large enough to provide for an economically viable fishery for IFQ holders.

2) Removes an obsolete reference in the IFQ Program regulations.

3) Clarifies IFQ vessel use cap regulations.

1.1.3.4 Authorize the Retention of Halibut in Pot Gear in the BSAI

On January 8, 2020, NMFS issued a final rule that implements Amendment 118 to the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area (BSAI FMP) and a regulatory amendment that revised regulations on Vessel Monitoring System (VMS) requirements in the BSAI and GOA (85 FR 840). The North Pacific Fishery Management Council (Council or NPFMC) recommended Amendment 118 to the BSAI FMP (Amendment 118) to require the retention of halibut by vessels using pot gear in the IFQ and CDQ fisheries in the BSAI, to prohibit the use of pot gear in the Pribilof Island Habitat Conservation Zone, to require vessels using pot gear to fish IFQ and CDQ to use logbooks and VMS, and to develop regulations that allow NMFS to limit or close IFQ or CDQ fishing for halibut if a groundfish or shellfish overfishing level (OFL) is approached, consistent with existing regulations for groundfish. In recommending Amendment 118, the Council

intended to address whale depredation in the IFQ and CDQ fisheries and to improve harvest efficiency of halibut.

Changes in gear use patterns are assessed in Section 2.4.5.6. Since 2020 landings of halibut with pot gear have been minimal. 2020 pot gear landings accounted for 0.45% of landings; in 2021 pot gear accounted for 0.47% of landings and in 2022 pots accounted for 0.36% landings.

1.1.3.5 Modify the Medical and Beneficiary Transfer Provisions

On February 14, 2020, NMFS published this final rule (effective March 16, 2020) to modify regulations regarding the medical and beneficiary transfer provisions of the IFQ Program for the fixed-gear commercial Pacific halibut and sablefish fisheries (85 FR 8477). This final rule is intended to simplify administration of the medical and beneficiary transfer provisions while promoting the long-standing objective of maintaining an owner-operated IFQ fishery. This final rule makes minor technical corrections to regulations for improved accuracy and clarity. This final rule is intended to promote the goals and objectives of the IFQ Program, the MSA, and other applicable laws.

1.1.3.6 Modify Temporary IFQ Transfer Provisions

On June 25, 2020, NMFS published an emergency rule (effective June 25, 2020–December 22, 2020) to modify the temporary transfer provisions of the IFQ Program for the fixed-gear commercial Pacific halibut and sablefish fisheries for the 2020 IFQ fishing year (85 FR 38100). This emergency rule (in response to COVID-19 restrictions) was intended to provide flexibility to quota shareholders in 2020 while preserving the long-standing objective of maintaining an owner-operated IFQ fishery in future years. This emergency rule did not modify other provisions of the IFQ Program. This emergency rule was intended to promote the goals and objectives of the IFQ Program, the MSA, the Halibut Act, and other applicable laws.

1.1.3.7 Temporarily Waive Vessel Use Caps on Halibut IFQs in Areas 4B–4D

On July 9, 2020, NMFS published this final rule (effective July 8, 2020–December 31, 2020) to revise regulations for the commercial IFQ Pacific halibut (halibut) fisheries for the 2020 IFQ fishing year (85 FR 41197). This final rule temporarily removed limits on the maximum amount of halibut IFQ that could be harvested by a vessel, commonly known as vessel use caps, in IFQ regulatory areas 4B (Aleutian Islands), 4C (Central Bering Sea), and 4D (Eastern Bering Sea). This final rule was necessary because immediate action was needed to ensure allocations of halibut IFQ can be harvested by the limited number of vessels operating in these areas due to travel restrictions and health mandates. This action is within the authority of the Secretary of Commerce to establish additional regulations governing the taking of halibut which are in addition to, and not in conflict with, those adopted by the International Pacific Halibut Commission (IPHC). This emergency rule is intended to promote the goals and objectives of the IFQ Program, the Halibut Act, and other applicable laws.

1.1.3.8 Fish-Up Provisions for CQEs with Halibut IFQs in Area 3A; and to Adjust Regulatory Language in Temporary Transfer Forms

On July 21, 2020, NFMS published this final rule (effective on August 20, 2020) that implements regulations for a "fish up" provision in the halibut and sablefish IFQ Program (85 FR 44021). The rule allows Community Quota Entities (CQEs) located in IFQ regulatory Area 3A (Southcentral Alaska) holding Area 3A category D halibut QS (i.e., for use on catcher vessel less than or equal to 35 ft (10.7 m) length overall) to have the associated IFQ harvested on category C vessels (catcher vessels less than or equal to 60 ft (18.3 m) length overall) beginning August 15 of each IFQ fishing season. This action also makes a minor change to regulations implementing the IFQ Program to consolidate temporary IFQ transfer forms. This final rule is intended to promote the goals and objectives of the Halibut Act, the Magnuson-Stevens Act, and other applicable laws.

1.1.3.9 Temporarily Waive Vessel Use Caps on Halibut IFQs in Areas 4A–4D

On May 26, 2021, NMFS published and issued regulations (effective May 26, 2021, through December 31, 2021) to temporarily remove limits on the maximum amount of halibut IFQ that may be harvested by a vessel, commonly known as vessel use caps, in IFQ regulatory areas 4A (Eastern Aleutian Islands), 4B, 4C, and 4D for the 2021 IFQ fishing year (86 FR 28294). This action was needed to provide additional flexibility to IFQ participants in 2021 to ensure allocations of halibut IFQ could be harvested by the limited number of vessels operating in these areas. This action was within the authority of the Secretary of Commerce to establish additional regulations governing the taking of halibut which are in addition to, and not in conflict with, those adopted by the IPHC. This action was intended to promote the goals and objectives of the IFQ Program, the Halibut Act, and other applicable laws.

1.1.3.10 Temporarily Modify Transfer Provisions for Sablefish and Halibut IFQs

On March 30, 2021, NMFS issued this temporary rule (effective March 30, 2021, through September 27, 2021) to modify the temporary transfer provision of the IFQ Program for the fixed-gear commercial Pacific halibut and sablefish fisheries for the 2021 IFQ fishing year (86 FR 16542). This emergency rule was intended to provide flexibility to QS holders in 2021, while preserving the Program's long-standing objective of maintaining an owner-operated IFQ fishery in future years. This emergency rule did not modify other provisions of the IFQ Program. This emergency rule was intended to promote the goals and objectives of the IFQ Program, the MSA, the Halibut Act, and other applicable laws.

1.1.3.11 Modify Regulations on Removal of GOA Sablefish Pot Gear Tags and Removal of Notary Requirements on QS Transfer Applications and Temporary Transfers of IFQ

On December 13, 2021, NMFS issued regulations (effective December 13, 2021) to modify recordkeeping and reporting requirements to remove pot gear tag requirements in the sablefish IFQ fishery in the Gulf of Alaska (GOA) and remove requirements to obtain and submit a notary certification on various programs' transfer application forms (86 FR 70751). This action is intended to reduce administrative burden on the regulated fishing industry and NMFS. This action promotes the goals and objectives of the MSA, Halibut Act, FMPs, and other applicable laws.

1.1.3.12 Temporarily Waive Vessel Use Caps on Halibut IFQs in Areas 4A–4D

On June 6, 2022, NMFS issued regulations (effective from June 6, 2022, through December 31, 2022) to temporarily remove limits on the maximum amount of halibut IFQ that could be harvested by a vessel, commonly known as vessel use caps, in IFQ regulatory Areas 4A, 4B, 4C, and 4D (NMFS 2022). This action was needed to provide additional flexibility to IFQ participants in 2022 to ensure allocations of halibut IFQ could be harvested by the limited number of vessels operating in these areas. This action was within the authority of the Secretary of Commerce to establish additional regulations governing the taking of halibut that are in addition to, and not in conflict with, those adopted by the IPHC. This action was intended to promote the goals and objectives of the IFQ Program, the Halibut Act, and other applicable laws.

1.1.3.13 Remove Vessel Use Caps on Halibut IFQs in Area 4 While a Long-Term Modification is Considered

On July 26, 2023, NMFS issued a final rule (Effective July 26, 2023) to revise regulations for the commercial IFQ Pacific halibut (halibut) fisheries for 2023 through 2027 (88 FR 48137). This rule removes limits on the maximum amount of halibut IFQ that may be harvested by a vessel, commonly known as vessel use caps, in IFQ Regulatory Areas 4A, 4B, 4C, and 4D. This action provides additional flexibility and stability to IFQ participants in those Areas while a longer-term modification of vessel use caps is considered. This action is intended to promote the goals and objectives of the IFQ Program, the Halibut Act, and other applicable laws.

1.2 Description of Management

1.2.1 Direct and Indirect Harvest of Halibut and Sablefish

Since the 2016 IFQ Program Review, several changes have occurred in both the direct and indirect harvest of Pacific halibut (*Hippoglossus stenolepis*) and sablefish (*Anoplopoma fimbria*) in Alaska's fisheries. Both species remain key demersal fish targeted in the IFQ Program, with some shifts in management and gear usage driving changes in harvest practices. Halibut continues to be harvested

primarily in waters between 300 to 2,000 feet along the continental shelf and often in or around underwater cantons or gullies, while sablefish are targeted in deeper waters ranging from 1,300 to 3,200 feet. Halibut is typically prosecuted in the directed fishery using longline gear, including hook-and-line, handline, jig, and troll gear while the directed commercial sablefish fishery has been prosecuted using longline gear, pot and trawl gear. Until 2016, both fisheries were typically prosecuted using longline hook-and-line gears. However, with implementation of the rule allowing the use of longline pot gear in the GOA sablefish fishery beginning with the 2017 fishing season, there has been increasing reliance on pot gear in the sablefish fishery. This change was made to mitigate the impact of whale depredation, improving catch efficiency and reducing gear losses, and as of 2023, longline pot gear is the primary gear used in prosecuting the sablefish IFQ fishery. Whale depredation has also had an indirect impact on halibut harvest efficiency, though to a lesser extent than for sablefish. Both species are also caught as bycatch in other longline fisheries, such as Pacific cod, and in trawl fisheries. Currently, the IFQ fleet receives 80% of the TAC in the Western and Central Gulf of Alaska sablefish IFQ areas, 95% of the TAC in the Eastern Gulf of Alaska, 50% of the TAC in the Bering Sea, and 75% of the TAC in the Aleutian Islands.

Halibut continues to be an important species for recreational, subsistence, and personal use fisheries, particularly due to its accessibility for smaller vessels and simple gear setups. Conversely, sablefish, with its more intensive gear requirements, remains predominantly targeted by larger vessels, with a less diverse prosecuting group. As described in further detail below, IFQ provisions are designed to accommodate the differences between these user groups. For instance, halibut QS remains transferable between the commercial and charter sectors and the program includes an additional class size for halibut QS. Changes, such as the increased flexibility in gear types for sablefish and adjustments to vessel caps highlight efforts to balance sustainability, operational efficiency and stakeholder needs in Alaska's halibut and sablefish fisheries.

1.2.2 Underlying Management Authority for the IFQ Fisheries

The NPFMC developed the IFQ Program for the commercial halibut and sablefish fisheries. In Federal waters, the IFQ Program for the sablefish fishery is implemented by the BSAI FMP under the authority of Section 303(b) of the MSA and corresponding Federal regulations (50 CFR part 679). The IFQ Program for the halibut fishery is implemented by Federal regulations (50 CFR part 679) under the authority of Section 5 of the Northern Pacific Halibut Act of 1982 (Halibut Act).

The IPHC and NMFS manage fishing for Pacific halibut through regulations established under the authority of the Halibut Act. The IPHC disseminates regulations governing the halibut fishery under the 1953 Convention between the United States and Canada for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and Bering Sea (Convention) and as amended by the 1979 Protocol Amending the Convention. The IPHC's regulations are subject to joint approval by the Secretary of State and the Secretary of Commerce (Secretary). After approval by the Secretary of State

and the Secretary, the IPHC regulations are published in the *Federal Register* as annual management measures.

Section 5 of 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. Section 5(c) of the Halibut Act also provides the Council with authority to develop additional regulations, including limited access regulations, as long as they do not conflict with approved IPHC regulations. The Council may amend the sablefish IFQ Program through amendments to the GOA and BSAI Groundfish FMPs, and through connected or independent federal regulations. Regulations developed by the Council for either the sablefish or halibut fishery may be implemented by NMFS only after approval by the Secretary[1].

1.2.3 Management Prior to the IFQ Program

The IPHC was first established in 1923 by the "Convention between Canada and the United States of America for the Preservation of the Pacific Halibut Fishery of the Northern Pacific Ocen and Bering Sea". The IPHC was tasked with managing and conserving the burgeoning Halibut fishery, which by 1921 was already showing signs of depletion from the introduction of diesel-powered vessels and mechanically assisted longline fishing. Following in-depth efforts to compile data and fishing effort and catch in the fishery, the IPHC was granted the authority to mandate catch reporting, divide the fishery into regulatory areas, regulate vessel licensure, collect catch effort statistics, regulate gear usage, institute the closure of fishing grounds, and set annual harvest quotas. By 1944, the weight per unit effort of halibut caught in the fishery had increased 340% from 1929 levels, indicating that the science-based management efforts had been effective in both restoring the halibut stock in in supporting a sustainable fishery (Kotlarov 2020).

Between the 1930s and 40s, the Pacific halibut fishing grounds were divided into 30 statistical areas to facilitate tracking the distribution of halibut stocks. Halibut stocks were primarily prosecuted as a part-time fishery, mainly by salmon gillnetters and trollers targeting halibut either before or after the salmon season. While annual halibut removals remained relatively constant during this period at an average 50 million pounds, the sablefish fishery remained comparatively small, averaging an annual catch of 3.7 million pounds.

Following WWII, which saw a disruption of the fishery due to demands on resources, vessels, and personnel, new entrants were also attracted to the fishery by improving halibut stocks. Many of these vessels came from the salmon fishery, who prosecuted halibut in May and June before moving to salmon, leading to a shortening of the halibut season. By 1953, the halibut season in the GOA, where the majority of the halibut were harvested, had shortened to 52 days. In British Columbia and Southeastern Alaska, the season had been reduced to only 21 days. Additionally, in the late 1950's,

[1] While Congressional action is not required to modify the IFQ Program, changes to CDQ allocations (as specified in the MSA) would require Congressional action.

Japanese and other distant water fleets began targeting pollock, flatfish, and Pacific ocean perch in the GOA, significantly increasing both sablefish and halibut bycatch as well.

By the 1960's halibut stocks showed sign of going into decline. The IPHC responded by reducing catch limits, even as more small vessels from the salmon fishery were attracted to the halibut fishery by increasing halibut prices. From 1961 to 1976, halibut landings decreased from 70 million annual pounds to 27 million annual pounds, and the IPHC estimated that annual halibut bycatch mortality averaged 14.83 million pounds during this period. Additionally, domestic sablefish harvest also increased to an average 15 million annual pounds during this period as pressure from foreign vessels decreased, accompanied by an increase in removals as trawler bycatch.

In 1976, the MSA was signed into law, extending US marine jurisdiction from 3 miles offshore to 200 nautical miles off the coast. Management authorities in these waters are a mix of state and federal agencies, with state agencies managing fisheries within the 3-mile boundary and NMFS managing fisheries from the 3-mile boundary to the edge of the exclusive economic zone (EEZ). The implementation of the MSA also implemented a co-management structure through the creation of 8 regional fishery management councils to represent public interests and provide recommendations for the design and modification of FMPs within their regions. This included the creation of the NPFMC. The MSA also expanded the geographic jurisdiction of the IPHC to more fully include the range of the halibut population which continued to be in charge of managing stock assessments, regulations, and setting annual catch limits.

In the late 1970's, discussions began about adopting a limited entry program to address concerns in the halibut fishery. In 1979, a protocol was signed between the US and Canada limiting halibut fishermen from each country to their own EEZs, and in the late 1980's, the IPHC restructured its management map, consolidating the previous 30 statistical areas into 10. The NPFMC drafted FMPs for groundfish in GOA in 1976 and for the BSAI in 1979, including six new designated sablefish fishery management regions. In 1982, the Northern Pacific Halibut Act was passed, resolving some ambiguities about the roles of IHPC and the NPFMC in management, specifically delegating authority for allocation and management of the fishery to the NPFMC who passed a 3-year moratorium on new entry to the halibut fishery in 1983.

However, despite the moratorium, the issues which led to its implementation continued to worsen through the 1980's. Barriers to entry into the halibut fishery were low and seasons were short, as low as 3–4 days in some areas. By the mid-1980's, the halibut fleet had grown to 3,500 vessels and sablefish to 1,800 and both fisheries were characterized as overcapacity. Both fisheries experienced similar issues, including high levels of bycatch and discard mortalities, ground congestion, highly compressed fishing seasons, lost gear, and incidences of death or injury from the derby-style prosecution of the fisheries.

In 1991, the NPFMC adopted a recommendation to implement an IFQ for both halibut and sablefish. This was accompanied by the formation of several advisory committees to examine various

implementation options. By 1992, the NPFMC submitted its final EIS for the preferred sablefish and halibut IFQ alternative along with FMP amendments for the sablefish fisheries (NPFMC and NMFS 1992). During this period, while the shape of the IFQ Program was being determined between 1991 and 1994, average halibut landings held steady at around 54 million pounds, though changes in the BSAI and GOA FMPs had reduced bycatch. Meanwhile, the sablefish fleet had shrunk to 1,000 vessels and management had reduced season lengths to limit catch, which by 1994 had been reduced to 10 days. In January of 1995, the IFQ Program was approved for implementation.

1.2.4 Description of the IFQ Program

An IFQ Program was selected as the preferred management alternative by the Council in 1991 for both halibut and sablefish fixed gear fisheries, was approved by the Secretary of Commerce in 1993 as a regulatory amendment and implemented by NMFS in 1995. As detailed above in Section 1.1.2 and in the final SEIS for the IFQ Program (NPFMC and NMFS 1992), the program's initial goals and objectives were developed in part to alleviate issues present in the previous management regime while limiting adjustment costs, supporting a broad and equitable distribution of quota in the long-term, benefiting coastal communities, and ensuring that fleet diversity and business relationships were maintained through the transition. These goals informed the Council's selection of components and provisions for the IFQ Program and continue to inform amendments to the program.

Since its implementation, the overall management of the IFQ Program has been characterized by largely decreasing restrictions. While discussed in more detail below, within the first year of the new regime, the Council implemented "fish down" provisions allowing smaller vessels to fish on IFQ designated for larger vessel classes and "sweep-up" provisions allowing larger amounts of IFQ to be swept up in QS blocks. Among other changes in the first 20 years of the program, the Council increased the number of QS blocks a shareholder can hold, allowed for some inter-area harvest of QS, and allowed for "fishing up" in some areas. Since 2016, a similar general lessening of restrictions has continued. The Council has expanded the allowable gear used to harvest Sablefish, allowed for retention of Halibut caught in pot gear in the BSAI, and removed halibut IFQ vessel caps in some areas, among others.

However, the goal of preserving the owner-operated characteristic of the fleet has remained unchanged since the program's implementation. The Council has repeatedly re-asserted its position on limiting hired master use for the harvest of catcher vessel IFQ and the acquisition of catcher vessel QS by nonindividual entities to continue progress toward an owner-operator catcher vessel fleet. However, increasing the access of community groups to the fishery has also been a goal of the Council, which elected to authorize the formation of CQEs which can purchase halibut and sablefish QS and lease resultant IFQ to their residents and allowed the halibut charter sector to lease QS from the commercial halibut IFQ sector. Additionally, in 2018 the Council authorized the formation recreational quota entities (RQEs) that could purchase and hold a limited amount of commercial

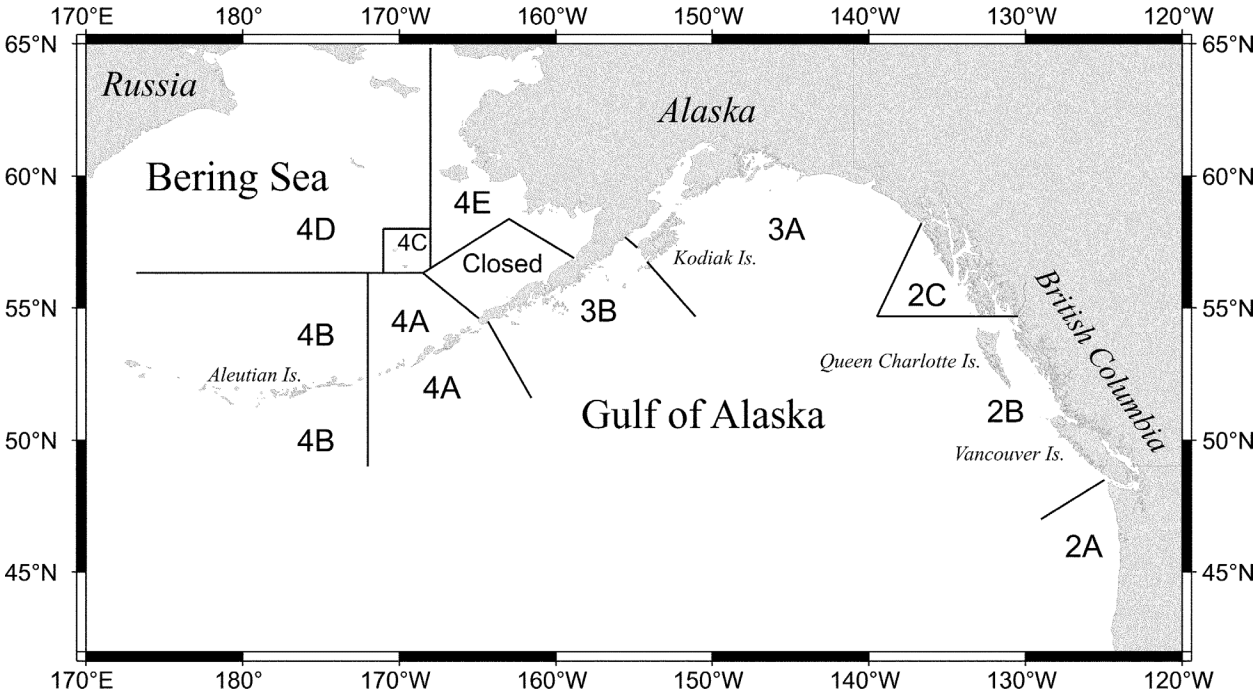
halibut QS and allowed CDQ groups to lease additional halibut IFQ in some areas during years of extremely low halibut commercial catch limits.

1.2.4.1 Total Allowable Catch

While there have been significant recent changes in how the IFQ sablefish fishery is prosecuted, these fisheries have historically been fished in similar manners and in overlapping areas and depths during most of the year. Despite this sablefish and halibut are very different fisheries. As such, while managed under one IFQ program, the total allowable catch (TAC) for each fishery is established in discrete regulatory areas.

The TAC for the halibut fishery is determined under the authority of the Halibut Act. There are eight halibut IFQ regulatory areas (Figure 1), inclusive of Areas 2C through Area 4E, although all of the Area 4E TAC is allocated to the CDQ Program. Areas 2A and 2B are not part of the IFQ Program. Area 2B is in Canadian waters and the Area 2A TAC is split among the States of Washington, Oregon, and California.

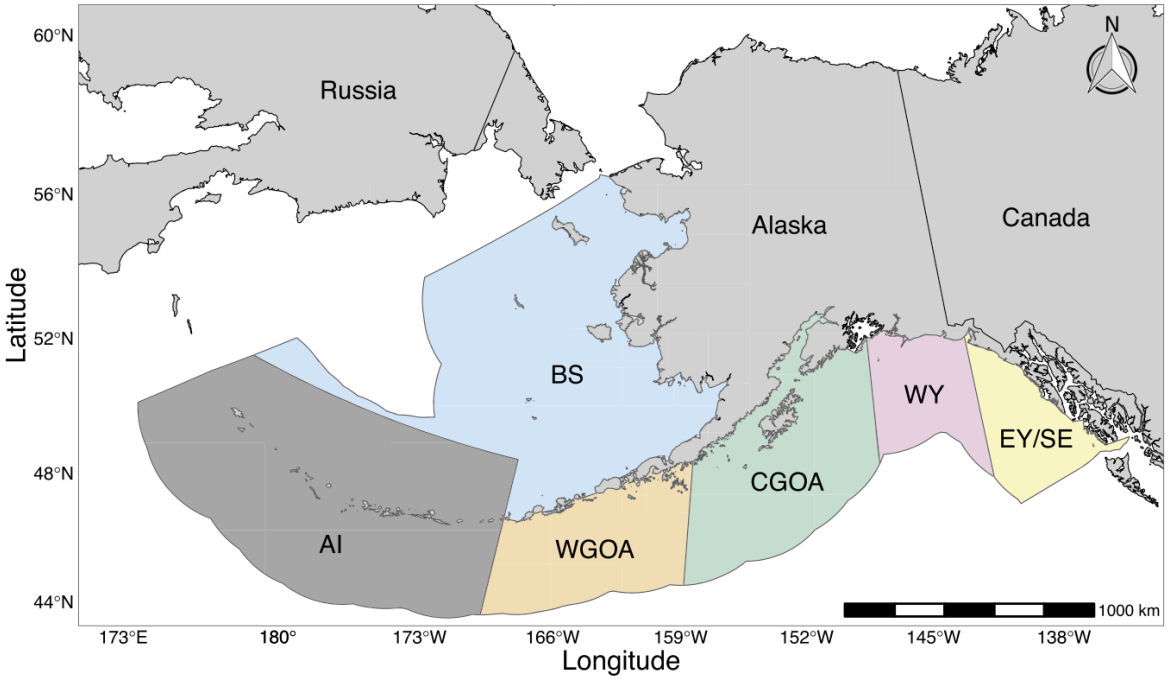
Figure 1. IPHC Halibut Regulatory Areas



Source: Reproduced from NPFMC and NMFS (2016)

For the sablefish IFQ fishery, the Secretary of Commerce determines the TAC available for the directed sablefish fishery, based on the recommendations of the Council. There are six sablefish regulatory area in the IFQ Program (Figure 2).

Figure 2. Sablefish IFQ Regulatory Areas



Note: AI, BS, WGOA, CGOA, WY, and EY/SE represent the Aleutian Islands, Bering Sea, Western Gulf of Alaska, Central Gulf of Alaska, Western Yakutat, and Eastern Yakutat/Southeast respectively.

Source: Reproduced from Cheng et al. (2023)

1.2.4.2 Initial Allocation

In the IFQ Program, QS grants limited access privileges to the fishery and that can be, with a few limitations, transferred as gifts or through voluntary market transactions. QS was initially allocated *de gratis* to "qualified person", defined as natural persons (individuals) or non-individual entities (such as partnerships, corporations, etc.) who owned or leased a vessel that made at least one fixed gear halibut or sablefish landing in the years from 1988 through 1990 in any IFQ regulatory area. Qualified persons were required to apply for their initial QS allocation in 1994. It was also mandated that initial QS recipients be U.S citizens, with non-individual entities qualifying if they owned a vessel registered in the U.S. during the qualifying years.

QS allocations are specific to regulatory areas and vessel classes (described below in *Area and Vessel Class Categorizations* in Section 1.2.4.3). Initial allocations were determined based on the qualifying person's landings. For halibut, the basis was the best five of seven years between 1984 and 1990, and for sablefish, the best five of six years between 1985 and 1990. Vessel class qualifications were based on the overall length of the vessel used to make halibut or sablefish landings in the most recent year of participation and upon whether or not the qualifying person processed fish on board the vessel.

Qualifying participation examined for vessel class assignment included 1988, 1989, 1990, and any part of calendar year 1991 prior to September 26th. These class designations determine the maximum length a vessel can be to land IFQ resulting from issued QS and whether or not processing is permissible aboard that vessel. QS are also assigned to specific halibut IPHC regulatory areas and sablefish regulatory areas based upon the person's qualifying landings within those areas. This area-based distribution was designed to reflect the biological distribution of stocks and limit the risk localized depletions.

QS acts as a species, area and vessel class-specific permit that determines maximum number of pounds of IFQ fish the QS holder is allowed to harvest in a given season. The QS pool (QSP) is the sum of all QS units issued within a given area for each QS species. This QSP is calculated annually by the NMFS Restricted Area Management (RAM) with only slight variance between years resulting from appeals, administrative adjustments or civil penalties. These adjustments have also resulted in the only QSP changes in IFQ regulatory areas since initial allocation. After the annual IFQ TAC is determined by fisheries managers, a person's annual IFQ is determined by the area QSP and the annual area-specific TAC, as follows:

$$IFQ = (QS/QSP) * TAC$$

CDQ Compensation QS

One of the goals of the IFQ Program (objective 9) is to support Western Alaska communities in the CDQ program with ties to the IFQ fishery. First implemented in 1992, the CDQ Program was incorporated into the MSA in 1996, through the Sustainable Fisheries Act (Pub. L. 104–297) and is intended to provide economic opportunities and achieve social benefits for the involved communities. In addition to crab and groundfish allocations, the CDQ groups receive allocations of the TAC in IPHC halibut regulatory areas 4B, 4C, 4D, as well as in the BSAI sablefish regulatory areas. Because some of the TAC in these areas was allocated to CDQ groups, some initial recipients received additional QS in other IFQ areas as compensation for loss of potential fishing privileges. Persons qualifying for "CDQ compensation" received proportional QS to the amount of halibut and/or sablefish QS foregone through CDQ allocation. Halibut compensation QS was given in Areas 2C, 3A, 3B and 4A and sablefish compensation QS was given in the Gulf of Alaska area. Compensation QS increased QSP in those areas.

For persons receiving halibut CDQ compensation in areas where they were already issued QS, the compensation QS was rolled into their existing QS holdings. However, in cases where persons were issued compensation QS in areas where they had not fished or been issued regular QS, it was ruled that CQD compensation QS could "swappable" to another catcher vessel category upon the first transfer, and used on any size catcher vessel until it was swapped or transferred.

Blocked and Unblocked QS

The IFQ Program contains provisions designed to reduce entry barriers for new fishermen and smaller owner-operators in the fishery by designating some QS as indivisible blocks. This "blocked" QS was determined at initial issuance if the awarded QS would yield less than 20,000 equivalent IFQ pounds in 1994. Once a QS block was established, it could not be broken up for transfer and could only be sold or transferred as a whole. Limits were also placed on the number of blocks that a person could hold. This was designed to ensure that the smallest, most affordable QS would remain available to part-time and small operators, thus aiming to promote fleet diversity and reduce disruption for isolated Alaska fishing communities.

Halibut CDQ compensation Qs was issued as "blocked" or "unblocked" depending upon their combined holdings in the area the issued area. In cases where CDQ compensation QS was unblocked if issued in areas where the person had not previously fished or been issued regular QS. Blocking also carries limitations on how QS can be transferred and is described in more detail below.

1.2.4.3 QS Ownership Caps and IFQ Use Provisions

QS holdings provide use privileges in the fishery that are specific to areas, vessel classes, and participant types. This section briefly describes these use provisions and how they apply to different participant groups.

Area and Vessel Class Categorizations

As noted above, halibut and sablefish QS privileges are tied to specific regulatory areas from which the associated IFQ may only be harvested. These areas are illustrated in Figure 1 and Figure 2 above.

Catcher-processors (also called freezer longliners) and catcher vessels have been the main vessels used to prosecute the directed sablefish and halibut fisheries. Catcher-processors are larger vessels that freeze their catch at-sea for offloading while catcher vessels can range in length from 10 to over 100 feet in length deliver their catch chilled or iced to shoreside plants or at-sea processors. QS use categories are divided among these vessels depending upon overall length of the vessel used to make qualifying landings. For halibut, there are 4 vessel class QS designations and for sablefish there are 3. Table 2 shows the vessel class designations for both fisheries at the time of implementation in the program and the current specifications. In both fisheries, Class A shares are designated for vessels that process at sea or catcher-processors and are not constrained by vessel length restrictions. Similarly, Class B shares in both fisheries can be fished by catcher vessels of any length and Class C shares are designated for vessels of greater than 60 feet in length. Class D vessels, vessels of length 35 feet or less, have historically not operated in the sablefish fishery as the fishery is prosecuted in deeper, offshore waters. Class D vessel QS were intended as the most-likely entry level opportunity for new entrants into the fishery and are designed to help maintain IFQ fleet diversity.

Table 2. Halibut and Sablefish IFQ Program Vessel QS Use Categories

IFQ Species	Class	Initial Specification	Amended Specification
Halibut	A Shares	Any CP	Any CP
	B Shares	CV > 60'	Any CV
	C Shares	35' < CV ≤ 60'	CV ≤ 60'
	D Shares	CV ≤ 35'	*CV ≤35'
Sablefish	A Shares	Any CP	Any CP
	B Shares	CV > 60'	Any CV
	C Shares	CV ≤ 60'	CV ≤ 60'

Note: CP = Catcher Processor, CV = Catcher Vessel
** True except in halibut Areas 3B, 4B, and 4C where Class D IFQ may be harvested on a vessel ≤ 60 feet.*
Source: Reproduced from NPFMC and NMFS (2016)

Since its implementation, the program has also received several amendments lessening the vessel length landing restrictions for QS vessel class designations. In 1996, the Amendment 42 "Fish Down" provision was implemented allowing the IFQ derived from larger vessel classes to be fished on smaller vessel classes (except in Area 2C of the halibut fishery and in the Southeast Outside District of the sablefish fishery, and unless the IFQ from those areas was derived from a block of 5,000 pounds or less). These changes are reflected in the "Amended Specification" of Table 2. These changes were intended to increase the flexibility of QS transfers between catcher vessels and to reduce the scarcity of large-to-medium-sized QS blocks in some areas. In 2007, the "fish down" restrictions on Area 2C and the Southeast Outside District were amended to allow Class b QS to be fished on vessels ≤ 60 feet.

"Fish up" provisions were also implanted in some areas of the fishery in 2007 to allow IFQ derived from smaller vessel class QS to be landed on larger vessel classes. The amendment allowed IFQ derived from Class D QS in the halibut fishery to be fished on vessels ≤ 60 feet in areas 3B and 4C. This was followed by an amendment in 2014 allowing Class D Qs to be fished by Class C vessels in area 4B. Additionally, in July of 2020, a "fish up" amendment was introduced allowing CQEs located in IFQ regulatory Area 3A (Southcentral Alaska) holding Area 3A category D halibut QS to harvest the associated IFQ of category C vessels beginning August 15 of each IFQ fishing season. The purpose of this change was to provide more flexibility to CQE community participants and further encourage CQE communities to secure long-term opportunities to harvest halibut.

Fishing IFQ Across Regulatory Areas

As shown in Figure 1 and Figure 2, in most cases, QS in the IFQ Program may only be harvested in specifically designated regulatory areas. The only exception is that all or part of the QS designated for Area 4C may be harvested in Area 4C or in Area 4D. Due to localized depletions around Area 4C, the intent was to provide additional harvesting opportunities for halibut IFQ fishermen under the rationale that the IPHC considers Areas 4C, 4D, and 4E to one contiguous halibut stock and that using IFQ across areas would not interfere with biological management of the stock.

Limits on QS Ownership and the Amount of IFQ Fished

The IFQ Program includes limits on the amount of QS use and vessel IFQ caps. These measures are intended to prevent excessive consolidation of harvest privileges that could result in loss of crew jobs, concentrate revenue in just a few communities, or create market imbalances. These limits take the form of QS use caps and vessel IFQ caps. QS use caps limit the amount of share that may be held individually or by a collective entity, while vessel IFQ caps (also referred to as vessel caps or vessel use caps) limit the amount of IFQ in pounds that can be harvested on a single vessel as a small percentage of the TAC for a given regulatory area or areas during a season.

Initially, QS use caps were expressed as a percentage of the QS pool (QSP). In 1997 for the halibut IFQ fishery and in 2002 for the sablefish IFQ fishery, the QS use caps were amended to be expressed as constant QS units rather than as a percentage of the QS pool to ensure a QS holder was not bumped over use cap due to changes in the overall QS pool. Table 3 shows the initial QSP percentages along with the current QS use cap and vessel IFQ caps as of March 2024. Vessel IFQ caps have been removed in Areas 4B-4D since 2020 and 4A from 2021-2027, and the Council is currently considering adjusting the caps in Area 4.

Table 3. QS Use and Vessel IFQ Caps

Fishery	Area of holdings	Applicable %	Use cap
	QS use caps		
Halibut	2C only	1% of QSP *	599,799 QS units
	2C, 3A, and 3B combined	0.5% of QSP *	1,502,823 QS units
	All of Area 4	1.5% of QSP *	495,044 QS units
Sablefish	Southeast Outside District only	1% of QSP *	688,485 QS units
	All sablefish areas combined	1% of QSP *	3,229,721 QS units
	Vessel IFQ caps		
Halibut	Area 2C	1% of IFQ TAC	35,000 net pounds
	All halibut areas combined	0.5% of IFQ TAC	86,480 net pounds
Sablefish	Southeast Outside District only	1% of IFQ TAC	117, 285 net pounds
	All sablefish areas combined	1% of IFQ TAC	607,940 net pounds

Source: NMFS (2024a)

*Note: * Indicates a calculation of how of use caps were determined during the IFQ Program's implementation and that has since been amended. As of 1997 for the halibut IFQ fishery and 2002 for the sablefish fishery, use caps have been determined as constant QS units rather than as QSP percentages. Current as of March 2024.*

The only exception to these caps is if a shareholder was initially allocated more than the amount of the QS use cap, that shareholder can continue to hold that amount above the cap; however, they are not permitted to acquire more quota greater than the cap. In addition, an individual that was 'grandfathered in' with QS holdings above the QS use cap may harvest this amount on one vessel, even if this amount exceeds the vessel IFQ cap. However, two or more IFQ permit holders may not catch and retain their IFQs with one vessel in excess of these limitations.

Overage/Underage Provisions

There are two provisions (overage and underage) in the IFQ Program, which allow shareholders to have a margin of error in how they harvest their annual QS allocations. If a person does not harvest their full annual IFQ allocation, an underage of up to 10% of that person's total IFQ account for a current fishing year will be added to that person's annual IFQ account in the year following determination of the underage. If a person lands IFQ species in excess of their annual IFQ allocation, their account will be debited in the following year by the amount of the overage, by up to 10% of the amount remaining in the person's IFQ account at the time of landing. Any overage greater than 10% is subject to confiscation and potentially an enforcement action, depending on the degree of overage, which is described in more detail in Section 2.4.2.3 and Section 2.12.6.3.

Owner-on-board Mandates

When creating the Alaska halibut and sablefish Individual Fishing Quota (IFQ) Program, the Council aimed to prevent the rise of absentee catcher vessel shareholders. They expressed that absentee quota share (QS) holders would counter the program's goal of directing benefits to those actively participating in the fishery. To address this, the Council included a requirement for catcher vessel QS holders to be on board, intending for the catcher vessel fleet to eventually operate entirely under owner-operators. Class A shares, largely corporate-owned when the program began and comprising a small portion of the total QS in these fisheries, were exempted from this requirement.

Additionally, the Council allowed an exception to the owner-on-board rule for individual initial recipients of catcher vessel shares, permitting them to employ hired masters—individuals designated by a qualified QS holder to land their IFQ. This exception aimed to accommodate initial recipients who used hired masters prior to the IFQ Program's establishment, letting them maintain their existing business practices.

In halibut Area 2C and the Southeast Outside District of the sablefish fishery, the Council restricted hired master use for individuals, including initial QS holders, limiting this option solely to non-individual entities. This restriction was put in place to uphold the traditionally owner-operated nature of the fleet in these regions. A summary of current hired master privileges by QS type, holder, and area is shown in Table 4.

Table 4. Hired Master Use Privilege by QS Type, QS Holder Type, and Area

	Initial Recipient Individuals	Second Generation Individuals (i.e. noninitial recipients)	Non-Individual Entities
Halibut Areas–3A, 3B, 4A, 4B, 4C, & 4D	Yes	No	Yes, must use a hired master
Halibut Area–2C	No	No	Yes, must use a hired master
Sablefish Areas–WY, CGOA, WGOA, AI, & BS	Yes	No	Yes, must use a hired master
Sablefish Area–Southeast Outside District	No	No	Yes, must use a hired master

Source: Reproduced from NPFMC and NMFS (2016)

Since the IFQ Program's inception, the hired master provision has undergone several modifications. However, since the 2016 20-Year Review, no additional changes have been made. Previous adjustments were implemented to address the Council's IFQ Program objectives and respond to emerging de facto leasing arrangements between initial recipients and their hired masters. The following amendments highlight key changes made to the owner-on-board requirements:

20% Vessel Ownership Requirement (64 FR 24960)

In 1999, the IFQ Program was amended to require shareholders to hold at least a 20% ownership stake in the vessel used to fish their IFQ if they intended to employ a hired master. This adjustment responded to Council concerns that some shareholders had only nominal ownership in vessels harvesting their IFQ, which, while compliant with existing regulations, did not align with the Council's goal of an active owner-operator fishery. This requirement does not apply to initial recipients who hired a master before April 17, 1997, provided their ownership interest in the vessel remains at least the same as it was on that date and they have not acquired additional QS through transfer since September 23, 1997.

Indirect Ownership of a Vessel Through Corporate Ties (67 FR 20915)

In 2002, the IFQ Program was amended to allow shareholders to meet the vessel ownership requirement through indirect ownership in a corporation or other entity. This amendment enabled shareholders with a corporate ownership interest to hire a master on a vessel owned by that entity, as long as they met the 20% minimum ownership requirement. This change recognized the common practice of using limited liability companies for vessel ownership and formalized existing NMFS management practices for calculating vessel ownership through corporate ties and accommodated persons moving vessel ownership to limited liability companies to protect personal assets.

Documentation Requirement for 20% Vessel Ownership (72 FR 44795)

In 2007, amendments specified the formal documentation required to verify the 20% vessel ownership interest necessary for using a hired master. This addressed concerns that previous, less formal documentation standards allowed some shareholders to misuse the hired master provision by maintaining informal or unsubstantiated ownership arrangements.

12/20 Rule (79 FR 9995)

The 2014 amendment introduced an ownership duration requirement for those meeting the minimum 20% interest to use a hired master, mandating that shareholders must own at least 20% of the vessel for 12 months before using a hired master. This requirement aimed to discourage shareholders from briefly meeting the ownership threshold solely for IFQ trips, ensuring an ongoing ownership commitment to vessels used by hired masters.

Prohibition on Hired Master Use on QS Transferred after February 12, 2010 (70 FR 43679)

In 2014, an amendment was put in place barring initial QS recipients from using hired masters to harvest IFQ derived from QS obtained after February 12, 2010. This change responded to the Council's concern over initial recipients consolidating QS and using hired masters excessively, slowing the transition to an owner-operated fleet and limiting new entrants. QS block consolidated prior to the effective date of December 1, 2014, retained hired master privileges; however, QS blocks consolidated after that date would require the QS holder to be present on board during harvest.

After December 1, 2014, individual and non-individual entities could sell catcher vessel QS obtained through transfer after February 12, 2010. While individual catcher vessel QS holders could opt to remain on board during IFQ harvests, non-individual entities, which were required to use a hired master, could not use catcher vessel QS received through transfer after February 12, 2010.

1.2.4.4 Transferability of QS and IFQs

Persons Eligible to Acquire QS by Transfer

When the IFQ Program was introduced, the Council established eligibility criteria for who could acquire QS by transfer, based on vessel class and regulatory area. These restrictions aimed to fulfill a range of management and program goals, which are further detailed below. However, these eligibility criteria were modified with the implementation of a rule on December 1, 2014, which limited the use of hired masters to QS transferred before February 12, 2010. A summary of QS acquisition rules before and after the December 1, 2014 rule can be found in Table 5.

The eligibility rules for transferring Class A QS have remained unchanged since the start of the IFQ Program. There are few restrictions on acquiring Class A shares across all areas; any individual or non-individual entity that meets U.S. citizenship requirements is eligible to obtain Class A QS by transfer within the IFQ fisheries.

Table 5 Eligibility to Receive QS by Transfer by Area and Vessel Class

	Prior to December 1, 2014		Post December 1, 2014	
Area	**Class A**	**Class B, C, and D**	**Class A**	**Class B, C, and D**
Halibut Area 2C and Sablefish Southeast Outside Area Any	Any individual or non-individual entity that meets the U.S. citizenship requirement	IFQ crewmembers*	Any individual or non-individual entity that meets the U.S. citizenship requirement	IFQ crewmembers*
All Other Halibut and Sablefish Regulatory Areas	Any individual or non-individual entity that meets the U.S. citizenship requirement	IFQ crewmembers* and non-individual entities that were initial recipients of catcher vessel QS	Any individual or non-individual entity that meets the U.S. citizenship requirement	IFQ crewmembers*

Note: Except that individual initial recipients of catcher vessel shares may transfer initially issued QS to a corporation that is solely-owned by that same individual and CQEs may receive catcher vessel QS by transfer in Areas 2C, 3A, 3B, and 4B and the SE, WY, CG, WG, and AI of the sablefish fishery (except that CQEs may not receive by transfer Class D QS in Area 2C). Current as of September 2024.

Source: Reproduced from NPFMC and NMFS 2016

When the IFQ Program was implemented, the Council restricted catcher vessel QS transfers to non-individual entities that were initial recipients and to IFQ crewmembers. An IFQ crewmember is defined as anyone with at least 150 days of commercial fish harvesting experience in any U.S. commercial fishery, or anyone who received an initial QS allocation in the IFQ fisheries. Additionally, as discussed later in the *Community Quota Entity (CQE) Program* section, CQEs are only allowed to purchase catcher vessel QS in certain areas. This policy aimed to gradually transition the catcher vessel fleet to individual QS holders by allowing non-individual initial recipients to exit through attrition. In halibut Area 2C and the sablefish Southeast Outside area, however, all non-individual entities (including initial recipients) were prohibited from acquiring catcher vessel QS by transfer. This additional restriction was intended to preserve the historically owner-operated, small-vessel fleet in these areas, protecting it from potential competition for QS by non-individual entities. One exception allows individual initial recipients to transfer their original QS to a solely owned corporation.

The rule introduced on December 1, 2014, which prohibited hired master use for IFQ derived from QS transferred after February 12, 2010, also prevented non-individual entities (other than CQEs) from acquiring catcher vessel QS by transfer. This change extended the restrictions initially in place in halibut Area 2C and the Southeast Outside area of the sablefish fishery to all IFQ regulatory areas, creating consistent transfer limitations across all regions. Currently, only individual IFQ crewmembers (and CQEs in certain areas) are eligible to acquire catcher vessel QS by transfer.

QS Leasing and IFQ Transfers

When the IFQ Program was launched, the Council aimed for the catcher vessel fleet to become entirely individually owned and operated. To support this vision, the Council established an owner-on-board requirement for individual catcher vessel shareholders and prohibited leasing of IFQ from

catcher vessel QS, with the details outlined in *Owner-on-board Mandates*. This section addresses the rules surrounding QS leasing and IFQ transfers.

Class A QS differ in that they are exempt from active participation requirements tied to catcher vessel QS. Since the start of the IFQ Program, IFQ from halibut and sablefish Class A QS has been leasable, meaning there is no owner-on-board mandate for Class A QS holders. The owner-on-board rule applies specifically to catcher vessels that deliver to shoreside processing plants, which are generally more connected to coastal communities compared to catcher processors, which perform onboard processing and were largely corporate-owned when the IFQ Program was designed.

Leasing of IFQ from catcher vessel QS was permitted during the first three years of the IFQ Program (1995–1998), allowing catcher vessel shareholders to lease up to 10% of the IFQ derived from their shares in a specific area. This leasing provision expired on January 2, 1998, and has not been reinstated.

Several exceptions exist to the general prohibition on leasing IFQ from catcher vessel QS, including survivorship leases, medical and military leases, leases by CQEs to residents, and annual transfers of commercial halibut IFQ to charter halibut permit holders as Guided Angler Fish (GAF). The CQE leases and GAF transfers are discussed in more detail in the sections covering the *Community Quota Entity (CQE) Program* and the *Halibut Charter Sector*.

Upon the death of a QS holder, the IFQ Program permits a beneficiary to lease IFQ from inherited catcher vessel QS for a limited period of time. In 1996, the Council added a provision allowing all QS to transfer to a surviving spouse unless otherwise specified in a will. The spouse may then lease the IFQ from these QS for up to three years following the QS holder's death, including any unfished IFQ from the current year. In 2001, the Council extended this survivorship rule to allow a temporary QS and IFQ transfer to a spouse or immediate family member. Currently, a surviving spouse or beneficiary may lease the IFQ from inherited QS for three years, after which the QS must transfer to an individual qualifying as an IFQ crewmember unless the beneficiary qualifies as one themselves.

In 2007, a medical lease provision was added to allow catcher vessel QS holders to lease IFQ if they have a medical condition (or an immediate family member does) that prevents them from fishing the IFQ. This provision applies only to shareholders not eligible to use a hired master, including those in halibut Area 2C and the sablefish Southeast Outside district, non-initial recipients, initial recipients who do not meet the 20% vessel ownership threshold to hire a master, and holders of QS transferred after February 12, 2010. The medical transfer provision has a limit of two transfers in any five-year period for the same medical condition but does not cap the overall number of medical leases a shareholder can request.

In 2008, a military lease provision was introduced, permitting catcher vessel IFQ leasing if a shareholder is in the National Guard or reserves and cannot participate in the IFQ fishery due to

active duty or military mobilization. Similar to medical leases, military leasing is limited to shareholders who are not otherwise eligible to hire a master to fish their IFQ.

The Block Program and Sweep-Ups

In the IFQ Program, QS were initially issued as either blocked or unblocked shares, as outlined in *Blocked and Unblocked QS*. Regulations limit the number of QS blocks a person can hold within a specific area, as well as the amount of unblocked QS a person can hold if they possess any blocked QS. The block system was designed to ensure that smaller QS amounts would remain available to facilitate new entrants into the fishery and prevent excessive consolidation of shares.

Over time, the block program has been revised to alleviate constraints on IFQ participants. At the program's inception, individuals without any unblocked QS could hold up to two QS blocks in a given area, while those holding unblocked QS were limited to one QS block per area. Additionally, small QS blocks could be "swept up" into larger ones; for instance, blocks yielding under 1,000 pounds for halibut or 3,000 pounds for sablefish could be combined, provided they did not exceed those limits.

In 1996, these sweep-up limits were increased to 3,000 pounds for halibut and 5,000 pounds for sablefish to allow for economically viable IFQ amounts for small-scale QS holders and to help new entrants access the fisheries.

The block program was further adjusted in 2007, introducing three provisions specifically for the halibut IFQ fishery:

1. Allowing a QS holder to possess up to three blocks instead of two;
2. Requiring that blocks in Areas 3B and 4A yielding over 20,000 pounds (based on 2004 harvest levels) be split into a 20,000-pound block and the remainder as unblocked; and
3. Raising the sweep-up limit in Areas 2C and 3A to 5,000 pounds.

Table 6 provides a summary of the QS block limits in place for the IFQ fisheries as of 2023. No changes have been made since the previous 2016 review.

Table 6. QS Block Limits

Fishery	If you hold:	Then you may purchase (up to the QS use cap limits)
Halibut	Unblocked QS	More unblocked QS or 1 QS block
	Unblocked QS and 1 block	Unblocked QS only
	1 block	2 additional blocks
	2 blocks	1 additional block
	3 blocks	To purchase additional QS, you would need to sell one or more blocks
Sablefish	Unblocked QS	More unblocked QS or 1 QS block
	Unblocked QS and 1 block	Unblocked QS only
	1 block	2 additional blocks
	2 blocks	To purchase additional QS, you would need to sell one or more blocks

Source: Reproduced from NPFMC and NFMS (2016)

Community Quota Entity (CQE) Program

As discussed in the 2016 IFQ Program Review, the recognition that significant amounts of sablefish and halibut QS were being transferred out of small, remote communities in the GOA led, in 2004, to the implementation of Amendment 66. Under this amendment, 42 communities each received approval to create a nonprofit entity (Community Quota Entity, or CQE) that could purchase, hold, and use commercial halibut and sablefish catcher vessel QS in the GOA (Halibut Areas 2C, 3A, and 3B and Sablefish Area SE, WY CG and WG). The CQE Program is described in more detail in Section 2.9.2.3.

Halibut Charter Sector

From 1984 to 1997, the IPHC required licenses for charter vessels, and by 1993, the Council began addressing the charter sector's expansion. Concerns from communities, especially Sitka, emerged over localized halibut depletion and the potential shift of more halibut yield from the commercial IFQ fishery to the charter sector. To address this, NMFS established a guideline harvest level (GHL) for Areas 2C and 3A in 2003 (68 FR 47256), setting pre-season harvest targets for the charter fishery without a strict cap.

Until 2007, anglers in both areas were limited to two fish per day, with no size restrictions, similar to unguided anglers. Between 2003 and 2007, Area 3A only slightly exceeded its GHL once, in 2005. However, Area 2C exceeded its GHL in three of those four years. In response, NMFS implemented stricter rules in Area 2C, including a two-fish bag limit with a size restriction on one fish (under 32 inches) and a State of Alaska order prohibiting captains and crew from retaining halibut. Despite these measures, Area 2C continued to exceed its GHL until 2010. In 2011, the IPHC imposed a one-fish daily limit with a 37-inch maximum length for Area 2C, but this proved overly restrictive, resulting in only 44% of the GHL being harvested.

In 2012–2013, the Council recommended a "reverse slot" limit, allowing fish below or above specified lengths to be harvested. This change helped bring harvests closer to, but still under, the GHL.

In Area 3A, charter anglers continued to follow unguided angler rules until 2014, with a two-fish daily limit and no size restrictions. Between 2003 and 2014, the GHL decreased only twice, in 2012 and 2013, and Area 3A harvests consistently stayed within the GHL, except for minor overages in 2005 and 2007.

In response to the charter sector's growth, which raised concerns about overcrowding in fishing areas and unpredictable harvests, the Council recommended a limited access program. Implemented in 2011, the Charter Halibut Limited Access Program (CHLAP) capped the number of charter businesses in Areas 2C and 3A, issuing federal charter halibut permits (CHPs) based on prior participation. The program aimed to stabilize the sector.

In 2008, the Council proposed a catch sharing plan (CSP) for the charter and commercial fisheries in Areas 2C and 3A, implemented in 2014, which replaced the GHL with a percentage-based allocation. The CSP set a combined annual catch limit for both sectors, based on halibut abundance. It also established a public process for the Council to recommend IPHC charter angler management measures, helping limit harvests to the annual cap.

The CSP also allowed limited leases of commercial IFQ for charter use through the Guided Angler Fish (GAF) program, launched by NMFS in 2014. The GAF program gives flexibility, enabling charter operators to lease IFQ from commercial holders, allowing charter anglers to catch one additional fish of any size. Charter anglers can use GAF to harvest halibut up to unguided angler limits in each area, helping them retain fish that would otherwise exceed charter limits.

Recreational Quota Entity (RQE) Program

In 2018, NMFS introduced regulations allowing a Recreational Quota Entity (RQE) to purchase halibut quota shares (QS) from commercial halibut fisheries in IPHC Areas 2C (Southeast Alaska) and 3A (Southcentral Alaska) on behalf of charter halibut operators. The halibut pounds associated with these QS would be added to the charter sector's annual allocation under the Catch Sharing Plan, enabling a shift of halibut allocation from the commercial to the charter sector through voluntary transactions between buyers and sellers.

Under the newly implemented rules, the RQE must comply with Alaska state regulations for non-profit organizations. In March 2020, NMFS approved the Catch Accounting Through Compensated Halibut Association to serve as the RQE, making it eligible to receive and permanently hold halibut QS through the transfer guidelines of the IFQ Program.

The regulations impose limits on the amount of QS the RQE can purchase, both annually and in total. The combined total of QS held by the RQE and QS linked to the GAF Program cannot exceed the overall

purchase limits in Areas 2C or 3A. Additionally, the RQE is restricted from purchasing blocked QS and Class D QS.

Rules were also implemented for "excess" QS accumulation by the RQE. If the RQE accumulates more QS than is needed to allow charter anglers a daily limit of two halibut of any size, then any excess poundage held by the RQE must be redistributed back to the commercial fishery for that fishing year. Half of this redistributed QS would also be assigned to qualifying Community Quota Entities in the affected area, and the other 50% would be allocated to small-scale QS holders, defined as those holding no more than 32,333 QS units in Area 2C or 47,469 QS units in Area 3A (equivalent to 2,000 pounds of IFQ in 2015).

However, the rules implementing the RQE did not contain any mechanism for the RQE to obtain funding to purchase QS, and in 2019, the Council began analyzing potential fee collection mechanisms. During this process, it was determined that NMFS did not have the authority to regulate RQE funding and stakeholders began working with members of the U.S. Congress to develop legislation granting NMFS that authority. As of June 2024, the Council was still considering various options for fee mechanisms in preparation for the enactment of this legislation.

2 Analytical Section

2.1 Data

The current IFQ Program review uses two primary data sources: 1) data on QS allocations were obtained from the NMFS Alaska Region web page summarizing Permits and Licenses Issued in Alaska (NMFS 2024d); 2) unless otherwise specified all other information was developed from data provided by the Alaska Fisheries Information Network (AKFIN). In addition, some tables and figures included in the 2016 IFQ Program review are updated in their entirety with data from 2016–2022. However, the focus of the current review is on presenting data that can be used to assess the impacts of the IFQ Program since the previous review. To the extent possible, real prices and revenues consistently adjusted for inflation to 2023 dollars are used.[2] Other data sources used throughout the report are described in the sections they are used.

2.2 Annual Catch Limits and Landings

This section summarizes annual catch limits and landings for the IFQ fisheries. Annual catch limits are generally considered exogenous to the IFQ Program. However, changes in the TAC following the implementation of the IFQ Program were highlighted in the 2016 Program Review as one of the most significant impacts to participants in the halibut and sablefish fisheries. It was noted that biologists had not found any direct linkages between overall stock abundance and the IFQ Program and that changes to the TAC for these fisheries were understood to be external to the program. Further discussion of the biological impacts of the program can be found in Section 2.11.

As noted in the previous review, the TAC in the halibut fishery increased during the first several years of the program (Figure 3). This initial increase may have mitigated some of the consolidation expected from IFQ Program implementation by increasing potential earnings for participants and incentivizing both current shareholders to remain and new entrants into the fishery. The halibut TAC began to decline in 2004 and had begun to slightly rebound just prior to the previous review in 2016. The trend of a slow increase in the TAC has continued since then, with 2022 reaching a level of TAC last seen in 2012. Comparatively, the sablefish TAC began decreasing directly after IFQ Program implementation and continued to decrease through 2016 (Figure 4). Since 2016, the sablefish TAC has continued to increase and by 2020, exceeded pre-IFQ levels of TAQ.

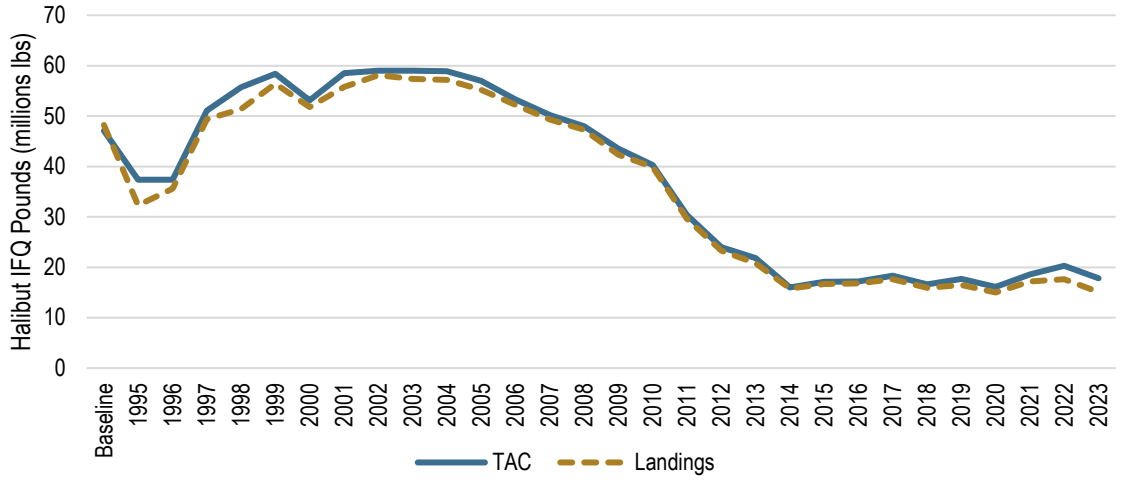
For halibut, while the TAC has begun rebounding slightly since 2014, the TAC is still suppressed compared to pre-IFQ levels and the immediate post-implementation highs. As noted in the 2016 IFQ Program Review, this can change the way the fishery is prosecuted. With a lower TAC, QS holders have fewer IFQ pounds to harvest which can lead to consolidation of QS on fewer vessels, either

[2] Nominal dollars have been converted to 2023 dollars using annualized Gross Domestic Product: Implicit Price Deflator data published by the Federal Reserve Bank of St. Louis (2024).

through coordination across QS holders to fish from a single vessel, leasing additional QS, or the selling of QS by smaller holders and purchase by larger holders. This consolidation may incentivize QS holders to act as hired masters for eligible shareholders instead and can potentially reduce crew jobs in the fishery. Conversely, the sablefish fishery has seen a rapid increase in the TAC since 2016. While this can have beneficial impacts for QS holders, such as the potential to increase revenue through the greater landings and increased QS prices with demand, it can also have potential distributional impacts for smaller communities and QS holders. Larger QS holders often benefit more from increases to the TAC as they are better able to capitalize on economies of scale. Smaller QS holders face limits on their ability to take advantage of TAC increases, such as access to markets and processing abilities.

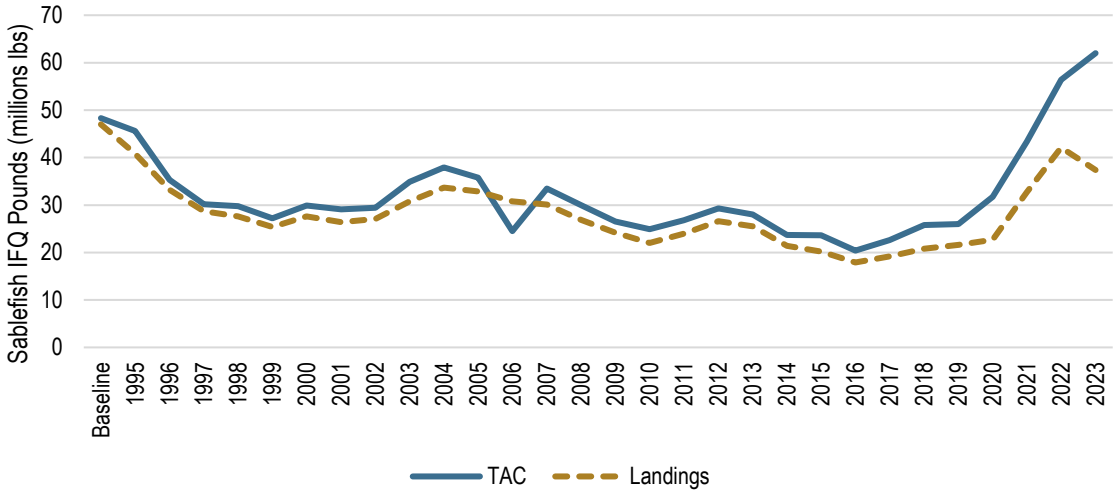
Figure 3 and Figure 4 also show the landings for halibut and sablefish relative to the TAC for each species. For halibut, the TAC was being overharvested during the baseline period prior to implementation and, until recently, halibut landings have tracked fairly close to the TAC, with utilization rates in the upper 90% since 2000. However, in 2019, utilization rates began to drop, even as the TAC continued to slowly increase. In 2023, the halibut TAC reached its lowest utilization rate since program implementation (84.8%). Comparatively, sablefish TAC utilization rates have been lower than halibut and generally ranged in the lower 90% since the program's implementation. As the TAC began to increase in 2016, utilizations rates have continued to decrease. In 2023, overall sablefish TAC utilization reached a program low of 60.3%. The previous review highlighted several potential reasons for the lower sablefish TAC utilization including under-harvest of TAC in the more remote BSAI where the opportunity cost to harvest is high. This is corroborated by a 2024 report to the fleet, which noted that Aleutian Islands sablefish TAC utilization reach an all-time low of 10.3% in 2023, compared to other sablefish regulatory areas which ranged between 60% and 83% (NPFMC 2024).

Figure 3. Annual Halibut TAC and Landings



Source: NPFMC (2024)

Figure 4. Annual Sablefish TAC and Landings



Source: NPFMC (2024)

2.3 Allocation and Distribution of QS

This section addresses the following objectives of the final EIS for the IFQ Program:

- Objective 2: Link the initial quota share allocations to recent dependence on the halibut and sablefish fixed gear fisheries
- Objective 3: Broadly distribute quota share to prevent excessively large quota share from being given to some persons.

As discussed in the previous review and Section 1.2.4.2 of the current review, under the IFQ Program, QS was initially allocated to those who owned or leased a vessel with legal fixed gear halibut or sablefish landings between 1988 and 1990. QS allocations were based on the sum of the best five years of landings as a proportion of total landings between 1984 and 1990 for halibut and 1985 and 1990 for sablefish. This allocation structure was designed to meet Objectives 2 and 3 of the IFQ Program.

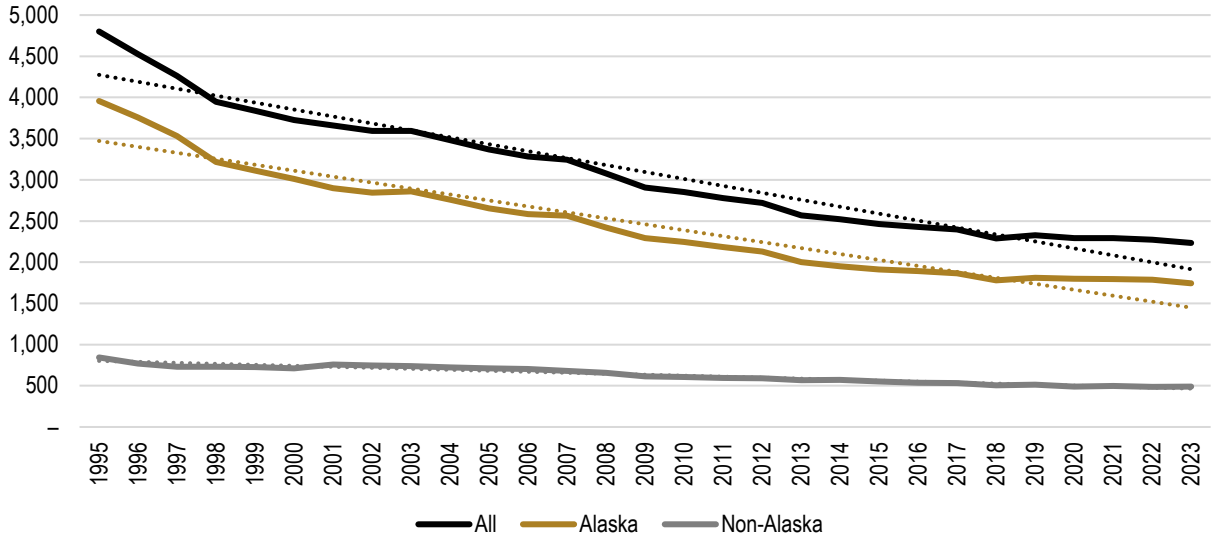
For each IFQ fishery, the following subsections provide fishery-wide summaries of the number and percentage of QS holders by state of residence, number and percentage of initial recipients of QS, and the number and percentage of IFQ allocations by state of residence.

2.3.1 Fishery-Wide QS and IFQ Allocations in the Halibut IFQ Fishery

When the IFQ Program began in 1995, 4,515 unique persons/entities were allocated halibut QS. As shown in Figure 5, since then, the number of halibut QS holders has declined by 50.5% to 2,234 in 2023. The linear trendlines in the figures in this section provide an approximate rate of change over

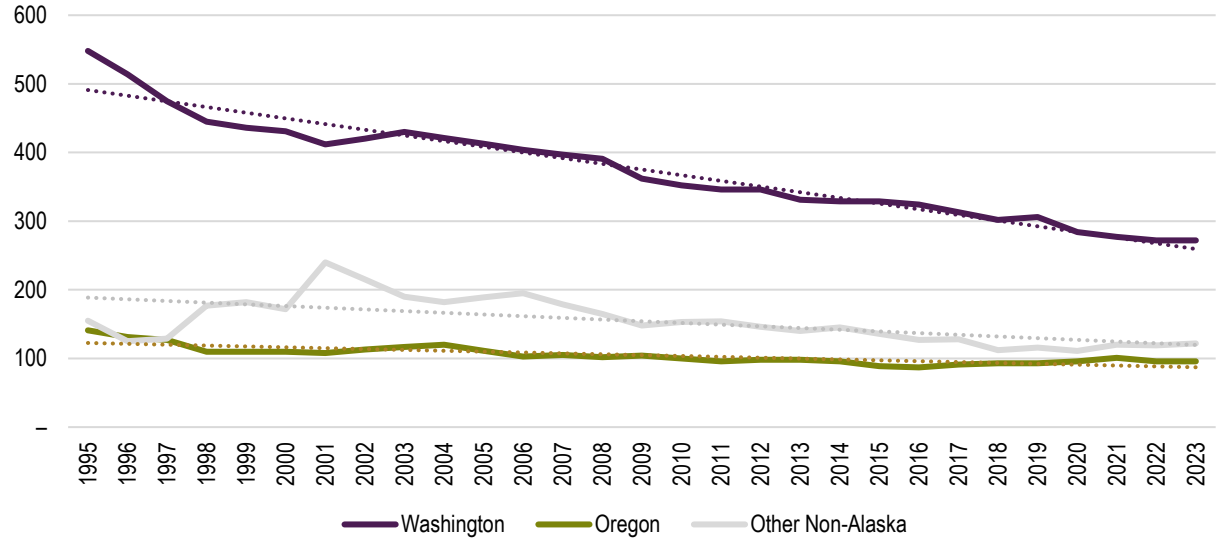
the years shown, e.g., Figure 5 shows that there was an overall average annual decline of ≈ 84 QS holders/year. The rate of decline was highest in the first few years of the program. Factors that may have contributed to the decline include (but are not limited to) changes in ex-vessel price, changes in TAC and vessel IFQ caps, regulatory changes with stricter owner-on-board requirements, and retirement of initial QS recipients. Alaska QS holders have been declining at a slightly lower rate (≈ 72/year) on average, while non-Alaska QS holders decreased at a much lower rate (≈ 12/year). As shown in Figure 6, QS holders residing in Washington are declining at a rate of ≈ 8/year, while QS holders in Oregon are declining at a rate of ≈ 1/year. QS holders residing in other non-Alaska states increased from 125 to 240 over the first 5 years of the program but overall have declined at a rate of ≈ 3/year. It is important to note that QS holder residence can change for two primary reasons—QS can be sold to a person residing in another state or existing QS holders may simply move.

Figure 5. Number of All, Alaska, Non-Alaska Halibut QS Holders



Source: Developed by Northern Economics based on data from NMFS (2024d)

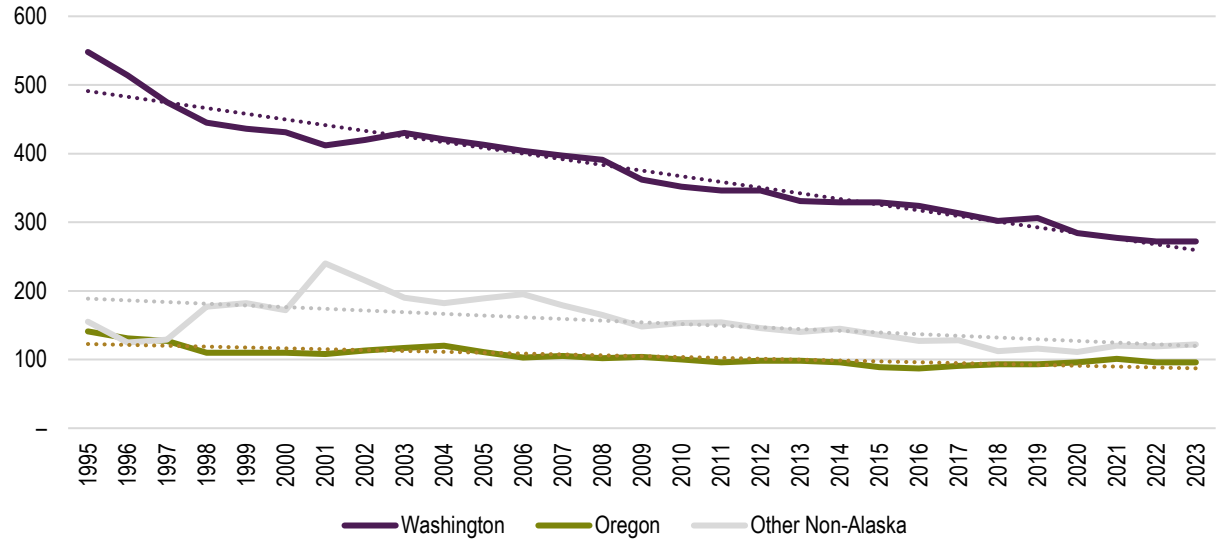
Figure 6. Number of Non-Alaska Halibut QS Holders



Source: Developed by Northern Economics based on data from NMFS (2024d)

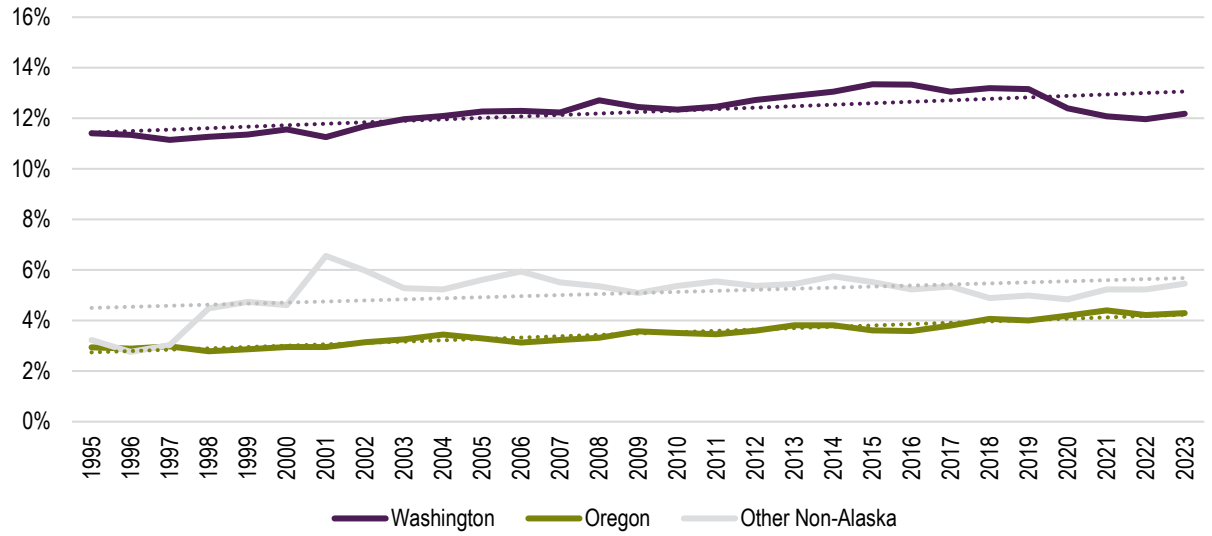
Figure 7 and Figure 8 show trends in the number and percentage of total halibut QS holders by state of residence. The proportion of QS holders who are Alaska residents has remained relatively constant over time at around 80% of shareholders. With respect to non-Alaska QS holders, the proportion of QS holders who are Washington residents has shown a slight increasing trend.

Figure 7. Number of Alaska and Non-Alaska Halibut QS Holders



Source: Developed by Northern Economics based on data from NMFS (2024d)

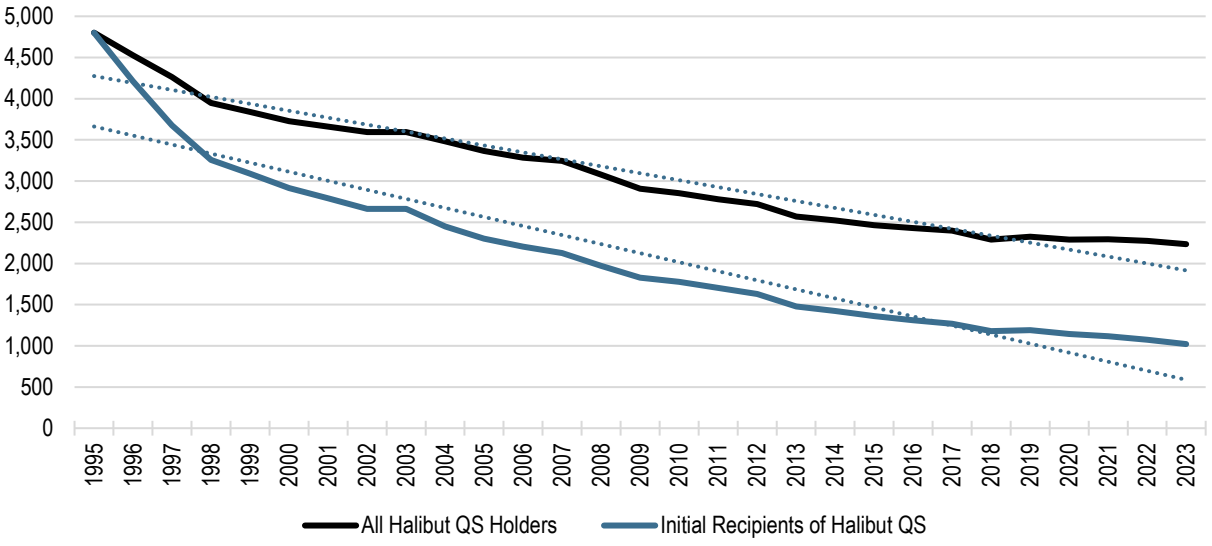
Figure 8. Percentage of Non-Alaska Halibut QS Holders



Source: Developed by Northern Economics based on data from NMFS (2024).

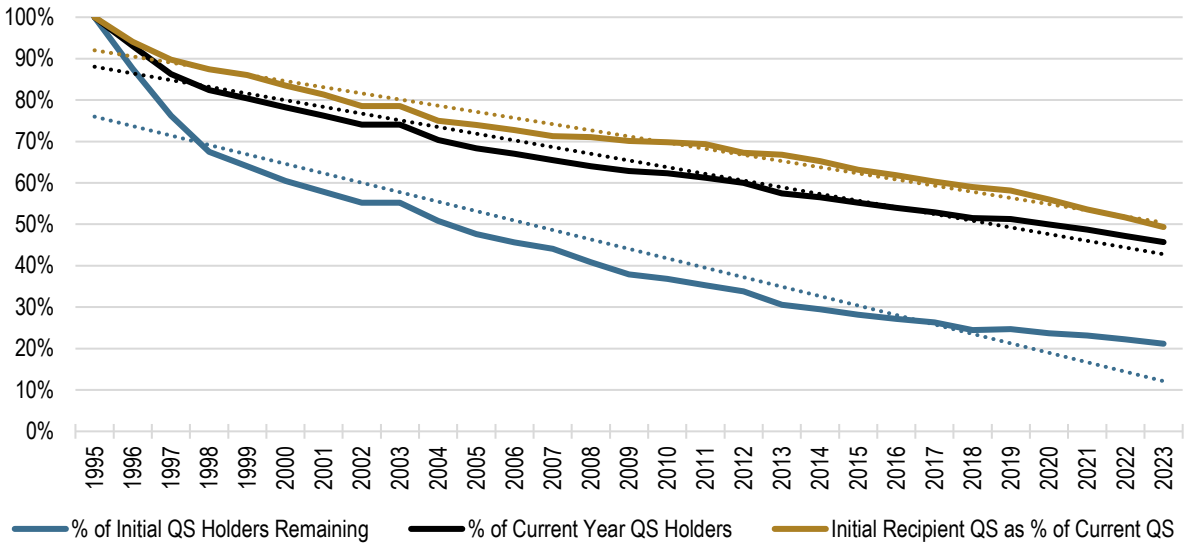
Figure 9 shows that the number of halibut QS holders who were initial QS recipients has declined at a faster rate than QS holders as a whole, while Figure 10 shows the trend in the percentage of QS holders who were initial recipients.

Figure 9. Number of Initial Recipients of Halibut QS



Source: Developed by Northern Economics based on data from NMFS (2024d)

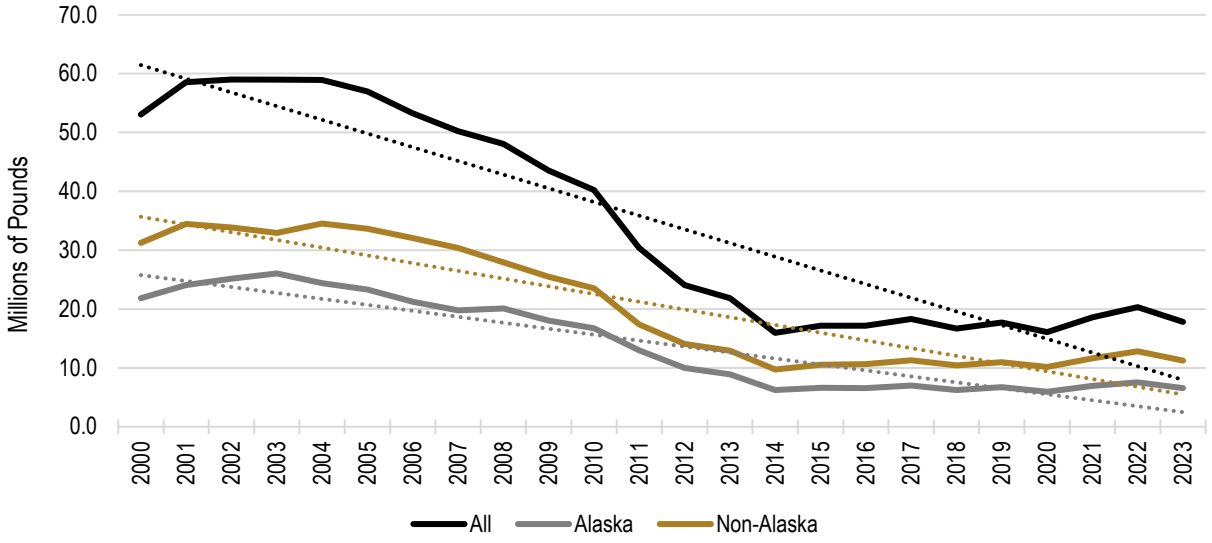
Figure 10. Initial Halibut QS Holder Percentages



Source: Developed by Northern Economics based on data from NMFS (2024d)

QS holdings translate into annual allocations of IFQ pounds. Figure 11 shows that due to decreases in the annual halibut TAC beginning in 2004, the allocation amounts received by all, Alaska, and non-Alaska halibut QS holders have shown an overall declining trend, although the amounts were fairly stable between 2014 and 2022.

Figure 11. Allocations of Halibut IFQ Pounds (All Areas) Across All, Alaska, & Non-Alaska QS Holders

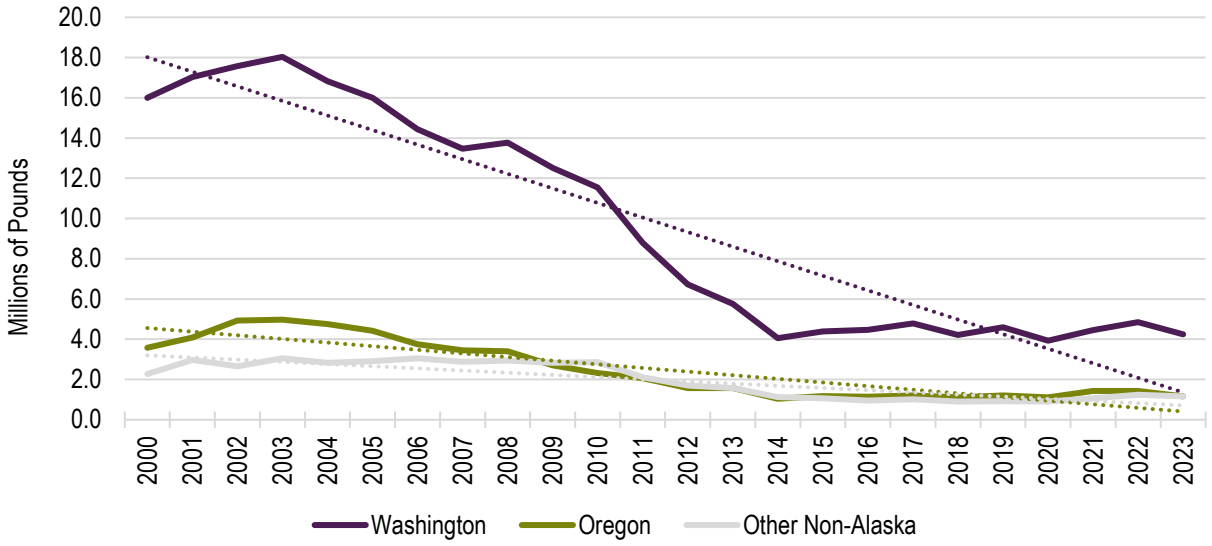


Note: IFQ allocation data are available only from 2000–2022. Also note that halibut IFQ pounds are issued in terms of dressed weight (headed and gutted) to match IPHC annual harvest specifications.

Source: Developed by Northern Economics based on data from NMFS (2024d) and AKFIN (2024)

With respect to allocation amounts across non-Alaska QS holders, Figure 12 shows that allocation amounts received by QS holders residing in Washington declined at a faster rate than amounts received by QS holders residing in in Oregon and other non-Alaska states.

Figure 12. Non-Alaska Allocations of Halibut IFQ Pounds (All Areas)

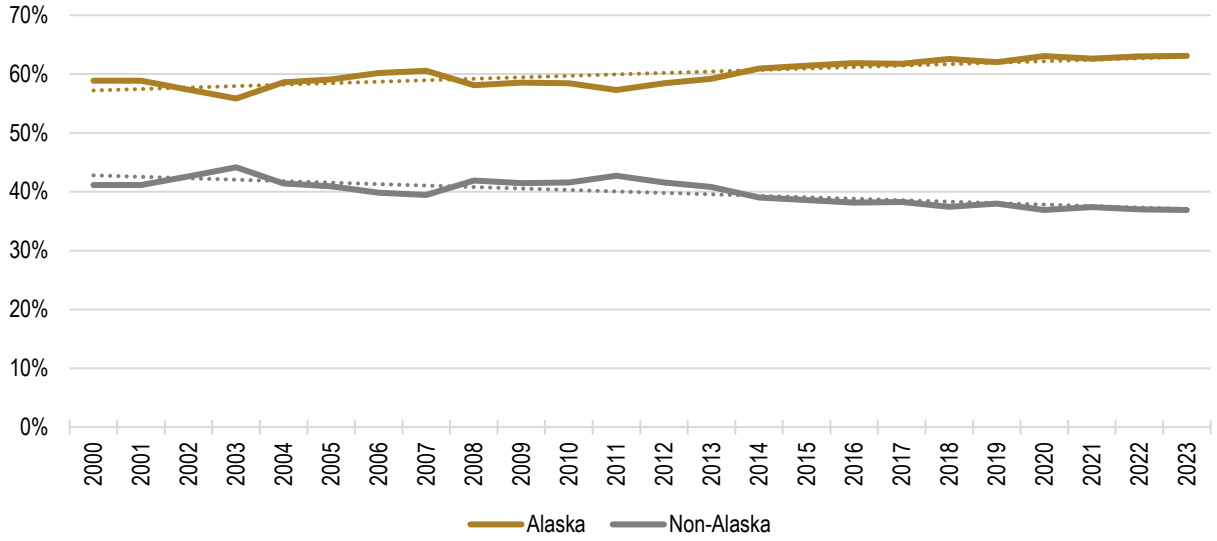


Note: Halibut IFQ pounds are issued in terms of dressed weight (headed and gutted) to match IPHC annual harvest specifications.

Source: Developed by Northern Economics based on data from NMFS (2024d) and AKFIN (2024)

As shown in Figure 13, the proportion of the total annual halibut allocation received by Alaska QS holders has shown a slight increasing trend.

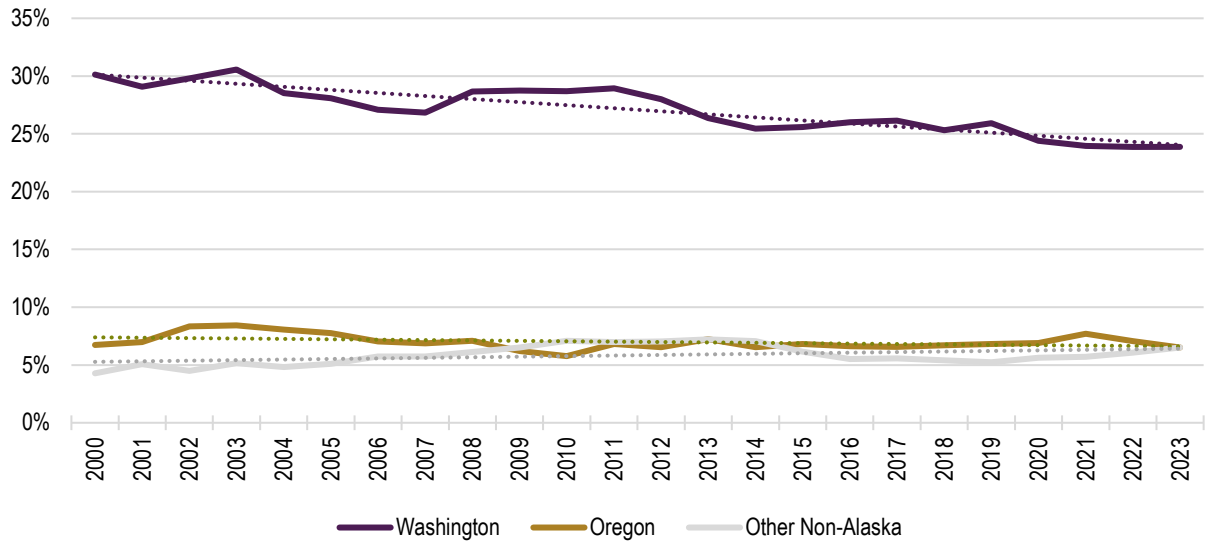
Figure 13. Percentage of Alaska and Non-Alaska Halibut IFQ Pounds (All Areas)



Source: Developed by Northern Economics using data from NMFS (2024d) and AKFIN (2024)

With respect to allocation percentages across non-Alaska QS holders, Figure 14 shows that the proportion of the total annual allocation received by QS holders residing in Washington has exhibited a decreasing trend.

Figure 14. Percentage of Non-Alaska Halibut IFQ Pounds (All Areas)

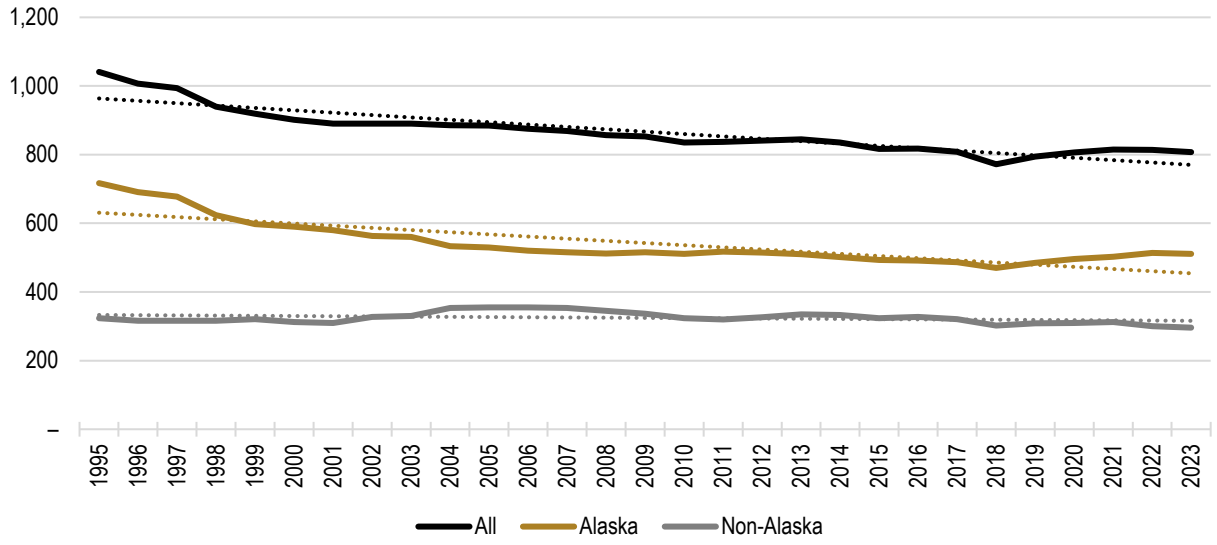


Source: Developed by Northern Economics using data from NMFS (2024d) and AKFIN (2024)

2.3.2 Fishery-Wide QS and IFQ Allocations in the Sablefish IFQ Fishery

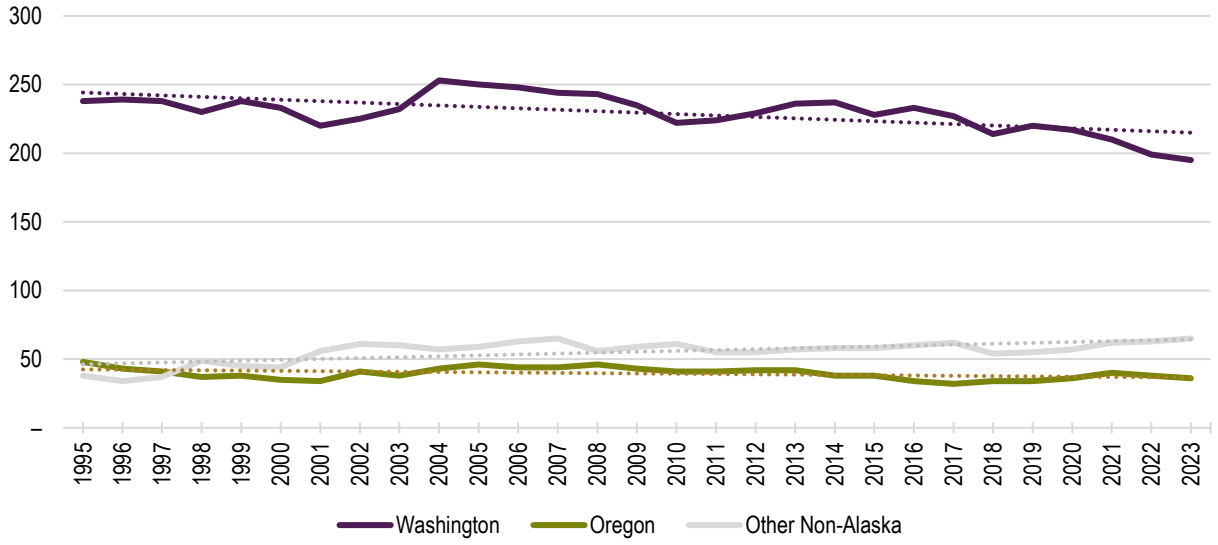
When the IFQ Program began in 1995, 1,006 unique persons/entities were allocated sablefish QS. Since then, the numbers of sablefish QS holders have declined to 807, with a low in 2017 of 722 (Figure 15). This is an average annual decline of about seven QS holders per year. Similar to the halibut fishery, factors that may have contributed to the decline include (but are not limited to) changes in ex vessel price, changes in the TAC and vessel IFQ caps, regulatory changes with stricter owner-on-board requirements, and retirement of initial QS recipients. Alaska QS holders have been declining at a slightly lower rate (≈ 6 per year) on average, while non-Alaska QS holders decreased at a much lower rate (≈ 0.6 per year). As shown Figure 16, QS holders residing Washington are declining at a rate of ≈ 1 per year, while QS residing in Oregon are declining at a rate of ≈ 0.2 per year. QS holders residing in other non-Alaska states increased at a rate of ≈ 0.7 per year. As noted above, QS holder residence can change because QS are sold to a person residing in another state or because an existing QS holder may move to another location. Despite the overall declining trend, since 2017 there has been a net increase in the number of shareholders, particularly among Alaska residents. In 2020 there were 815 QS holders, including 503 Alaska residents, in 2023 there were 807, including 511 Alaska residents.

Figure 15. Number of All, Alaska, Non-Alaska Sablefish QS Holders



Source: Developed by Northern Economics using data from NMFS (2024d)

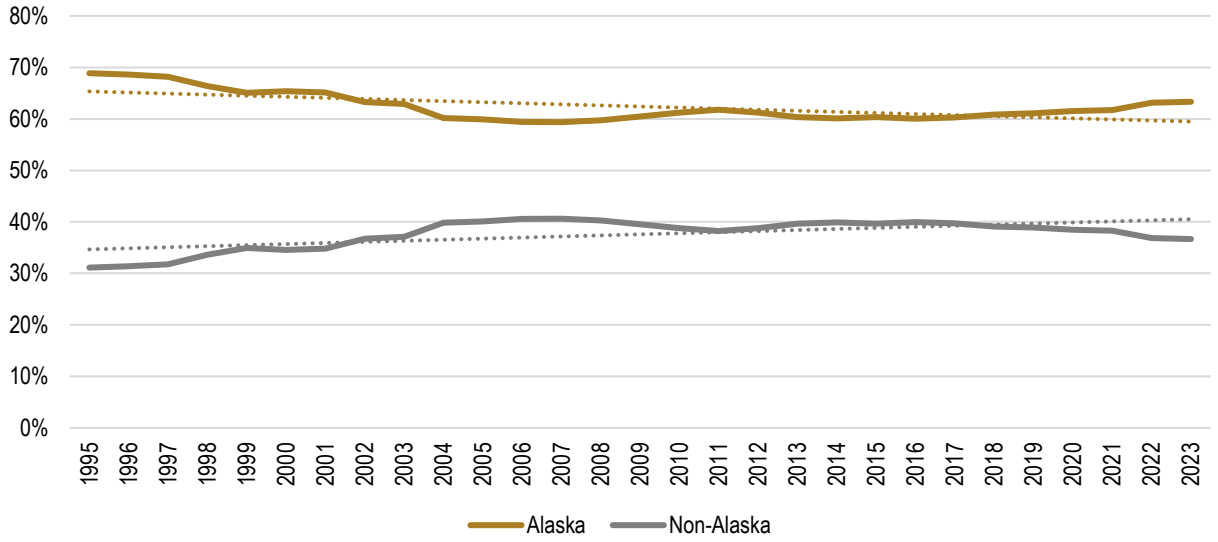
Figure 16. Number of Non-Alaska Sablefish QS Holders



Source: Developed by Northern Economics using data from NMFS (2024d)

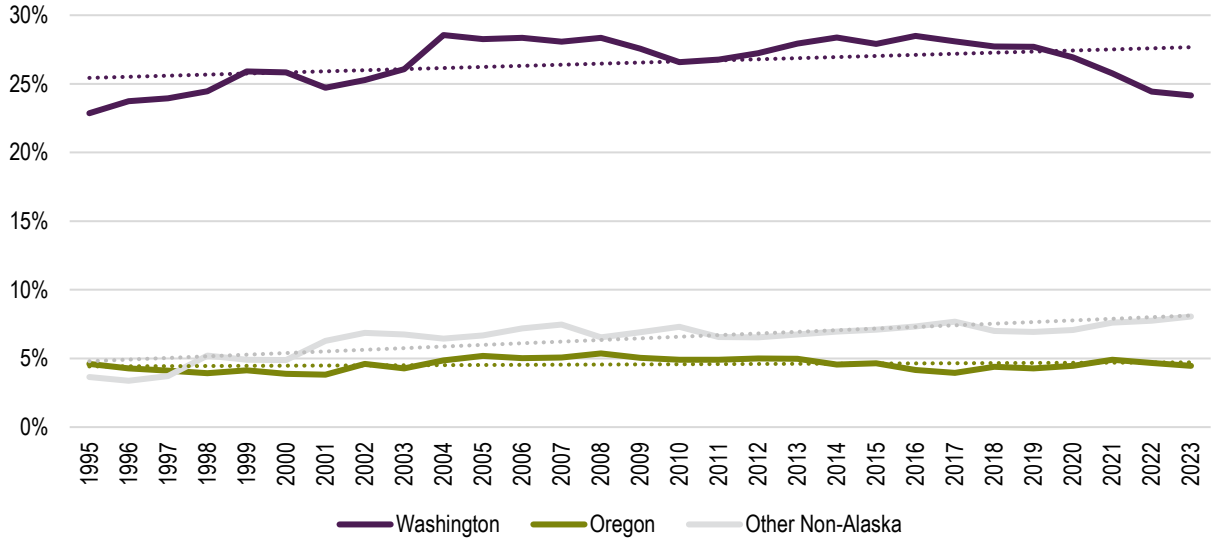
Figure 17 and Figure 18 show trends in the percentage of total sablefish QS holders by state of residence. The proportion of QS holders who are Alaska residents have increased to 50% of the total QS holders by 2022. With respect to non-Alaska QS holders, the proportion of QS holders who are Washington residents has shown a slight increasing trend.

Figure 17. Percentage of Alaska and Non-Alaska Sablefish QS Holders



Source: Developed by Northern Economics based on data from AKFIN (2024d)

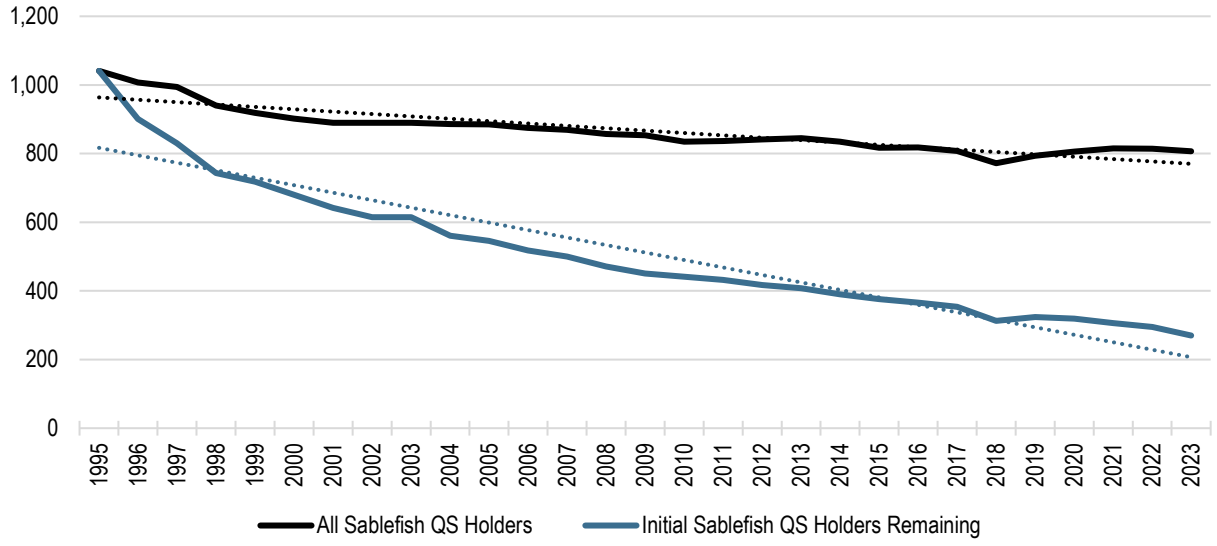
Figure 18. Percentage of Non-Alaska Sablefish QS Holders



Source: Developed by Northern Economics based on data from NMFS (2024d)

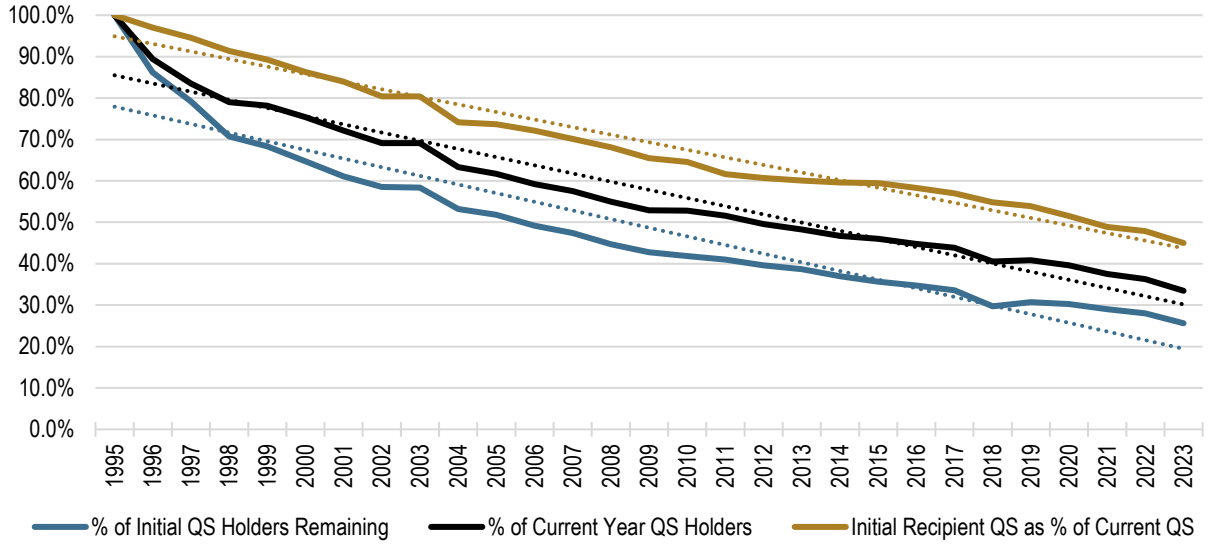
Figure 19 shows that the number of sablefish QS holders who were initial recipients has declined at a faster rate than QS holders as a whole, while Figure 20 shows the trend in the percentage of QS holders who were initial recipients.

Figure 19. Number of Initial Recipients of Sablefish QS



Source: Developed by Northern Economics based on data from NMFS (2024d)

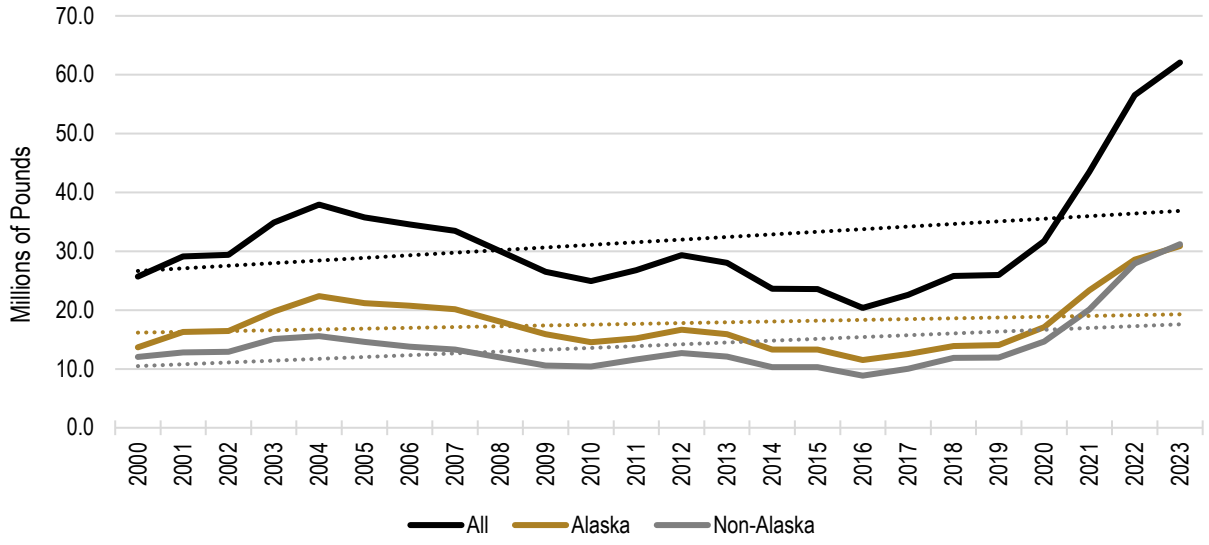
Figure 20. Initial Sablefish QS Holder Percentages



Source: Developed by Northern Economics based on data from NMFS (2024d)

Figure 21 shows that due to increases in the annual sablefish TAC beginning in 2019, the allocation amounts received by all, Alaska, and non-Alaska sablefish QS holders increased markedly in recent years.

Figure 21. Allocations of Sablefish IFQ Pounds (All Areas)—All, Alaska, & Non-Alaska QS Holders

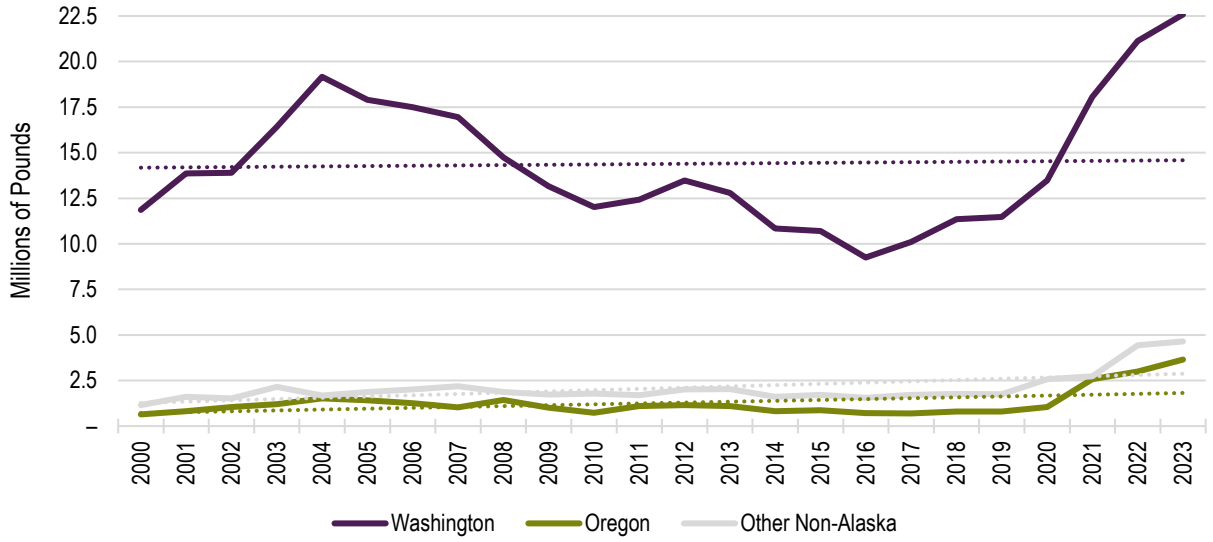


Source: Developed by Northern Economics based on data from NMFS (2024d) and AKFIN (2024)

With respect to allocation amounts across non-Alaska QS holders, Figure 22 shows that from 2004 to 2019 allocation amounts received by QS holders residing in Washington showed an overall

declining trend, while the amounts received by QS holders residing in Oregon and other non-Alaska states were relatively stable. More recently, allocation amounts in both areas increased as a result of TAC increases in the sablefish IFQ fishery.

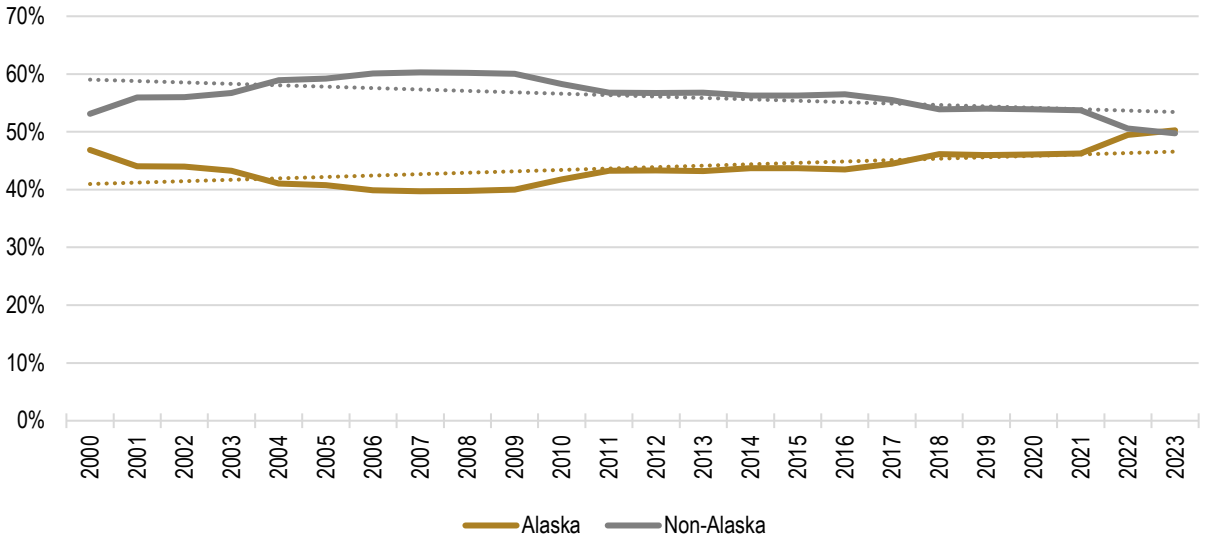
Figure 22. Non-Alaska Allocations of Sablefish IFQ Pounds (All Areas)



Source: Developed by Northern Economics based on data from NMFS (2024d) and AKFIN (2024)

As shown in Figure 23, the proportion of the total annual sablefish allocation received by Alaska QS holders has shown a slight increasing trend, with the share held by Alaska residents increasing from 40% in 2007 to 50% in 2023.

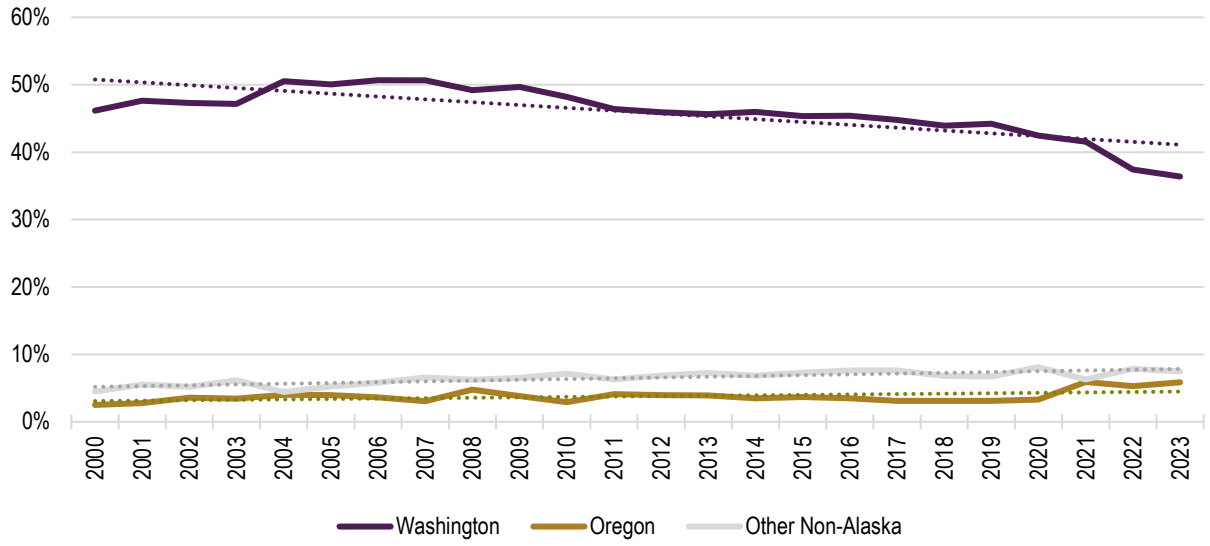
Figure 23. Percentage of Alaska and Non-Alaska Sablefish IFQ Pounds (All Areas)



Source: Developed by Northern Economics based on data from NMFS (2024d) and AKFIN (2024)

With respect to allocation percentages across non-Alaska QS holders, Figure 24 shows that the proportion of the total annual allocation received by QS holders residing in Washington has shown a decreasing trend.

Figure 24. Percentage of Non-Alaska Sablefish IFQ Pounds (All Areas)



Source: Developed by Northern Economics based on data from NMFS (2024d) and AKFIN (2024)

2.4 Harvesting Flexibility, Harvest Capacity, Gear and Allocation Conflicts, and Product Wholesomeness

This section addresses the following objective of the final EIS for the IFQ Program:

- Objective 1: Address the problems that have occurred with the current management regime—excess harvesting capacity, allocation conflicts, gear conflicts, and product wholesomeness.

To evaluate how the IFQ Program is meeting these wide-ranging elements of this objective, this section includes several subsections, including harvesting flexibility, harvest capacity, gear and allocation conflicts, and product wholesomeness.

2.4.1 Harvesting Flexibility

As noted in the 2016 IFQ Program Review, the elimination of the derby-style fishing in both the halibut and sablefish fishery has been one of the most prominent impacts of the IFQ Program, enabled by the implementation of QS and exclusive harvesting rights. The resulting longer fishing seasons have yielded multiple benefits for the fishery, including better handling of fish, changes from frozen to fresh product deliveries, allowing time for the removal of unused fishing gear from the grounds,

and greater safety for fishery participants who have less incentive to fish under unsafe weather conditions or deal with congested fishing grounds. Prior to IFQ Program implementation, season length in sablefish fishery decreased to as little as 10 days while the halibut fishery decreased to as little as 2 days in IPHC areas 2C and 3A (Kotlarov 2020). The first season of the program in 1995 increased season length to 245 days (March 15 to November 15). Both the sablefish and halibut IFQ fisheries have maintained the same season open and closure dates since implementation. Recent season lengths (2015 to 2023) have remained similar to the initial 1995 length, with an average season length of 252 days (Table 7). However, beginning in 2021 the average season length increased to 275 days, starting earlier in March and lasting into early December.

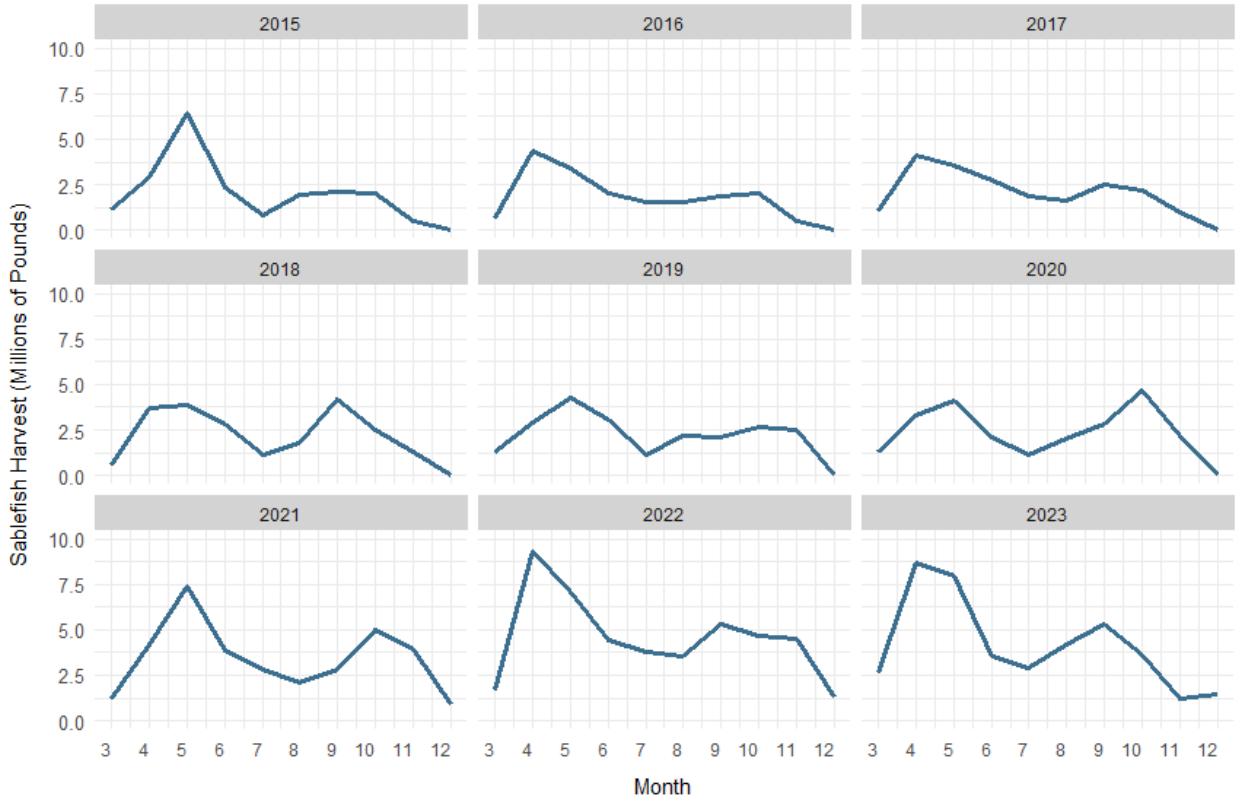
Table 7. Halibut and Sablefish IFQ Season Lengths

Year	Season open Date	Season Close Date	Number of Days in Season
2015	14-Mar	7-Nov	238
2016	19-Mar	7-Nov	233
2017	11-Mar	7-Nov	241
2018	24-Mar	24-Nov	245
2019	15-Mar	14-Nov	244
2020	14-Mar	15-Nov	246
2021	6-Mar	7-Dec	276
2022	6-Mar	7-Dec	276
2023	10-Mar	7-Dec	272
		Average	**252.3**

Source: Developed by Northern Economics based on data from AKFIN (2024)

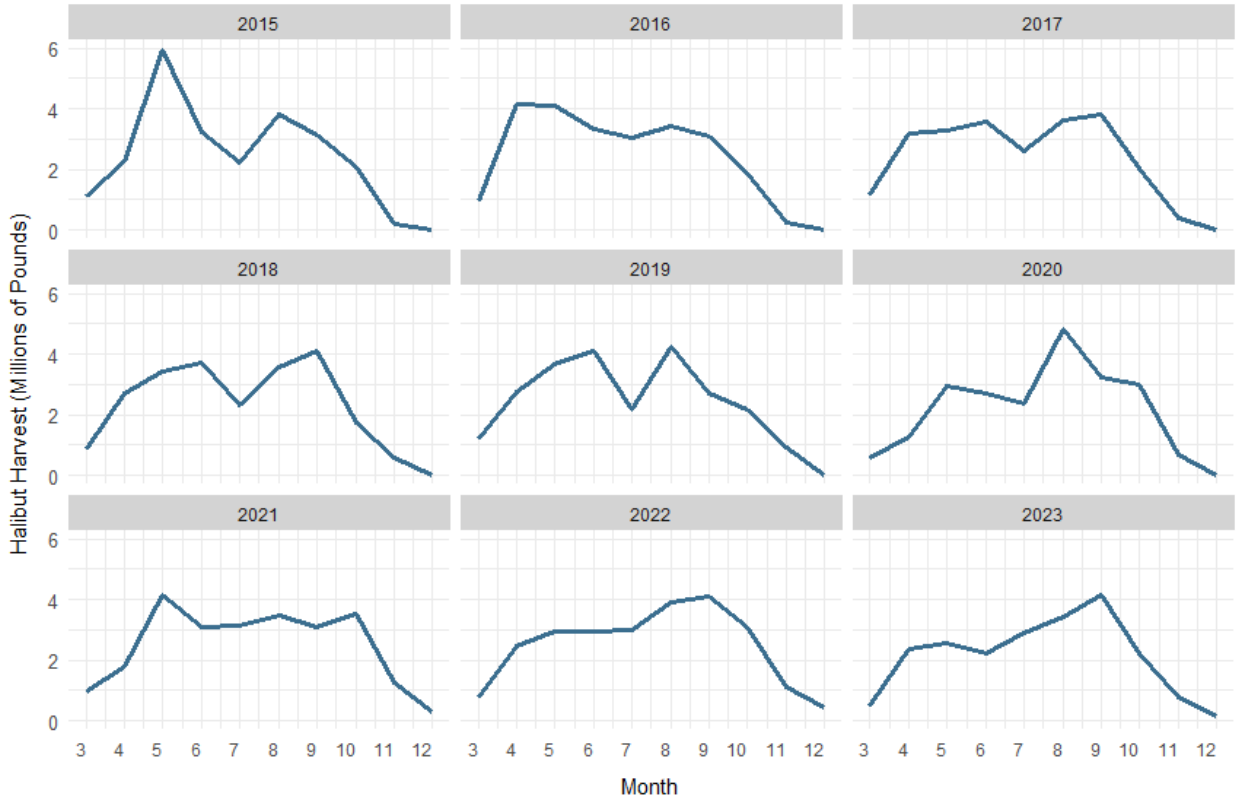
Guaranteed access to fishing privileges through QS has created a slower-paced fishery with a catch widely distributed across the fishing season. Between 2015 and 2023 for sablefish, this catch has typically peaked between April and May, with a secondary peak between October and November (Figure 25). During this period, halibut has shown a similar trend, with a peak in April/May and second peak in September/October (Figure 26). However, where the early sablefish peak is either larger or equal to the later peak, halibut harvest peaks have shifted during this period. While the early peak was the larger in 2015, by 2017 both early and late harvest peaks had approximately evened out. By 2020, the later peak had become significantly greater, with 2023 showing a 63% greater halibut harvest peak in September than in May.

Figure 25. Sablefish Harvest by Month



Source: Developed by Northern Economics based on data from AKFIN (2024)

Figure 26. Halibut Harvest by Month



Source: Developed by Northern Economics based on data from AKFIN (2024)

2.4.2 Harvest Capacity

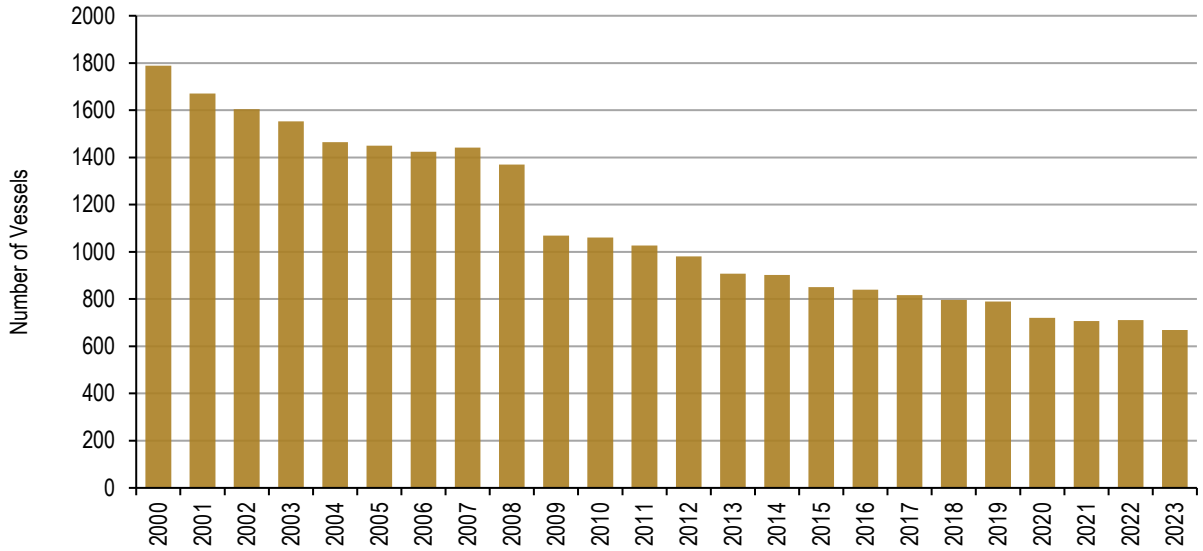
2.4.2.1 Fleet Capacity

Changes in the number of active vessels in the fishery are one way to understand the overall harvest capacity of the fleet. As noted in the 2016 Program review, both the halibut and sablefish fisheries saw the most dramatic changes in fleet sizes during the first year of the program, with the number of vessels dropping 63% for the halibut fleet and 56% for sablefish. This consolidation continued in both programs in the following years. By 2014, the halibut fleet had decreased by another 55% (down to 920 vessels) compared to 1995, the first year of the program, and the sablefish fleet had decreased by 49% (down to 315 vessels). As seen in Figure 27 and Figure 28, consolidation in both fleets has continued in the current fisheries. As of 2023, the halibut fishery had 669 vessels making active landings, down an additional 27% from 2014 and down 68% compared to 1995 levels. However, the sablefish fleet, which has been more consolidated since the outset of the program, has decreased at a slower rate than the halibut fleet. As of 2023, the fleet has decreased by 11% since 2014 and 55% since 1995. Notably, where the halibut fishery has decreased in size nearly every year since 2000, the sablefish fleet has periodically shown a small increase, including increases in 2021 and 2022 that

remained stable through 2023. However, while this alters the overall trend of decreasing vessel numbers in the fishery, it's too early to tell if this is the beginning of new slight upward trend.

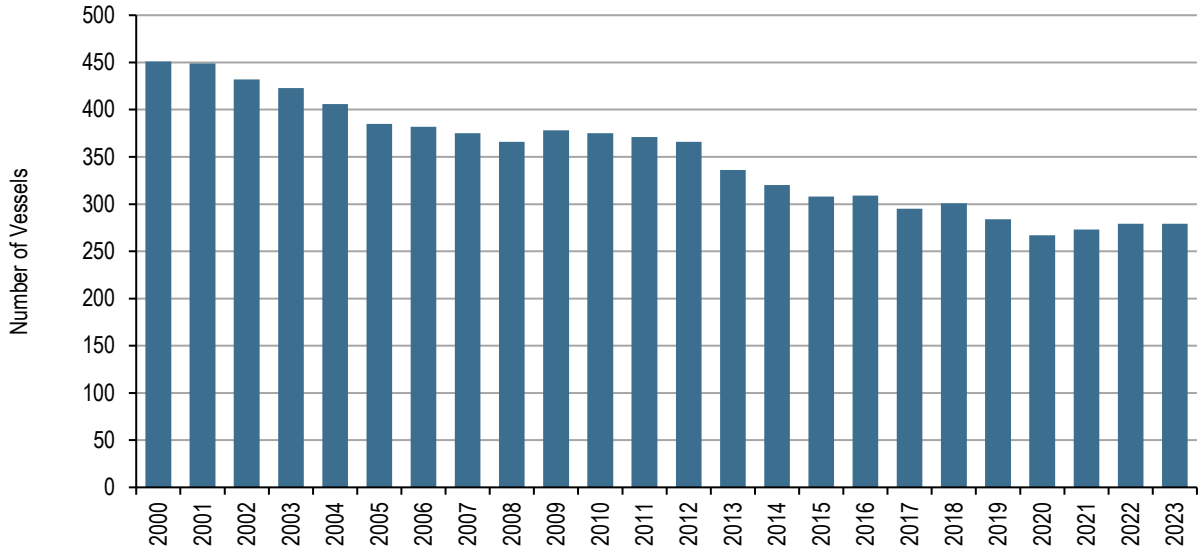
While inter-annual variability in the rate of consolidation in these fleets is likely related to factors like environmental conditions, TAC, ex-vessel price, and IFQ caps, the overarching trend of shrinking fleet sizes is related to the decreasing number of QS holders in both fleets. As noted in the previous review, the initial steep consolidation was likely related to many participants receiving small, sometimes uneconomical, amounts of IFQ. However, consolidation of QS among fewer holders has continued into the current fishery as evidenced by the decreasing number of vessels, though this also can be explained by increased coordination and cooperation among QS holders seeking to decrease operating costs by sharing vessels.

Figure 27. Number of Active Vessels in the Halibut IFQ Fishery



Source: Developed by Northern Economics based on data from AKFIN (2024)

Figure 28. Number of Active Vessels in the Sablefish IFQ Fishery

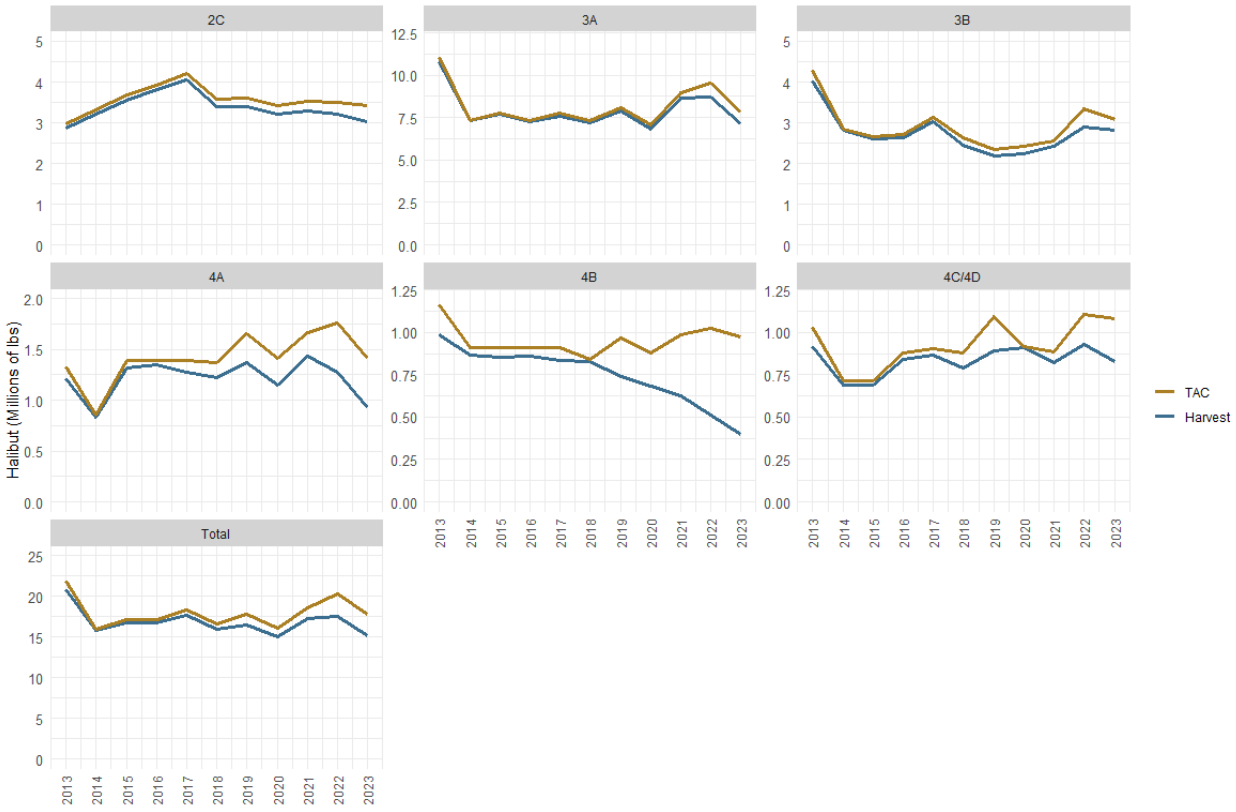


Source: Developed by Northern Economics based on data from AKFIN (2024)

2.4.2.2 Utilization by Regulatory Area

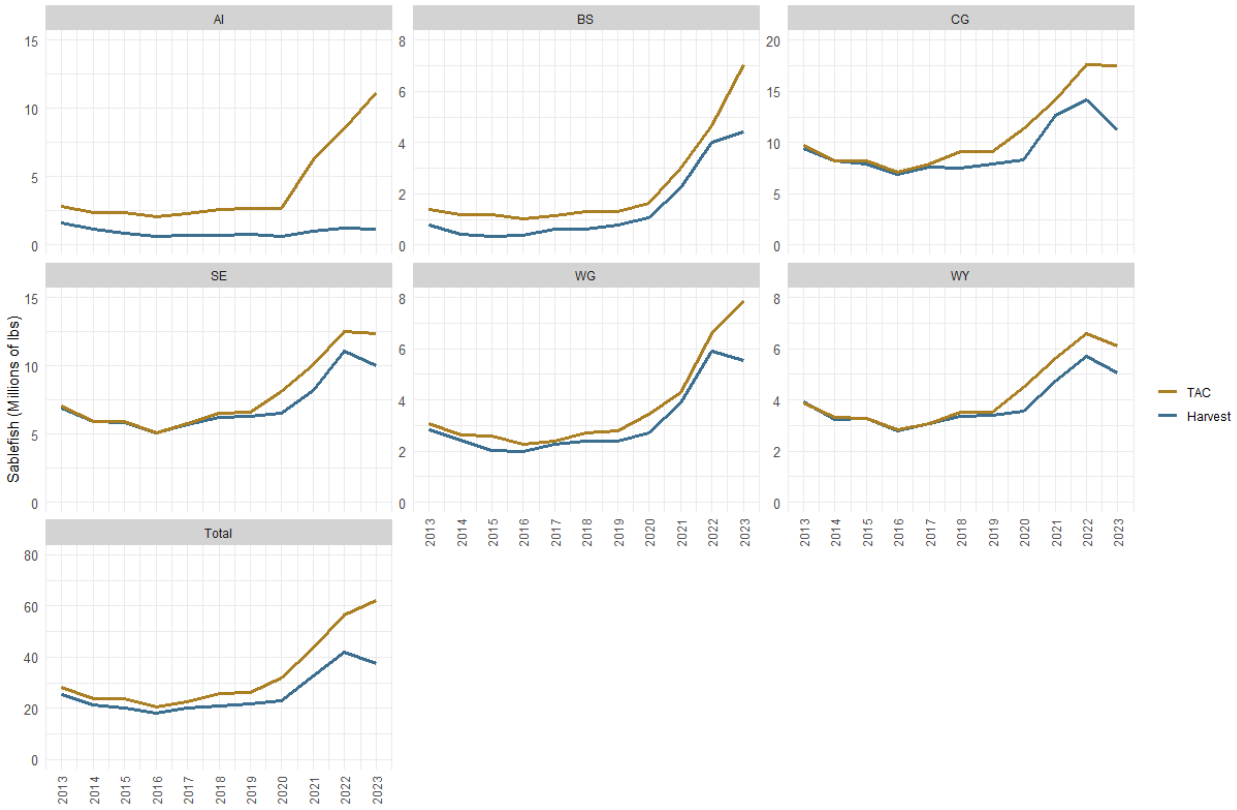
As discussed in Section 2.2, both halibut and sablefish total landings have recently failed to meet TAC. However, there has been variation in utilization across regulatory areas in both fisheries. For halibut (Figure 29 and Figure 31), landings and TAC have shown large amounts of interannual variability across areas. Landings have followed TAC relatively closely in areas 2C, 3A, and 3B, where the majority of landings in the halibut IFQ fishery are made, with more recent divergences beginning in 2021. Areas 4A and 4C/D have shown wide gaps between TAC and landings since 2017. Since 2018, landings in area 4B have been steadily decreasing while TAC has continued to increase. For sablefish (Figure 30 and Figure 32), landings have generally increased across all areas from 2013-2022, though landings in AI have consistently been lowest in the fishery during this period with minimal fluctuations. For the areas of CG, SE, WG and WY, areas where most sablefish landings are made, TAC increases began outpacing landings in 2019. Across all areas, save for AI which remained relatively constant, landings either dropped or slowed in 2023, creating large gaps between TAC and landings and contributing to the low utilization rate discussed previously.

Figure 29. Halibut IFQ Landings and TAC by Regulatory Area



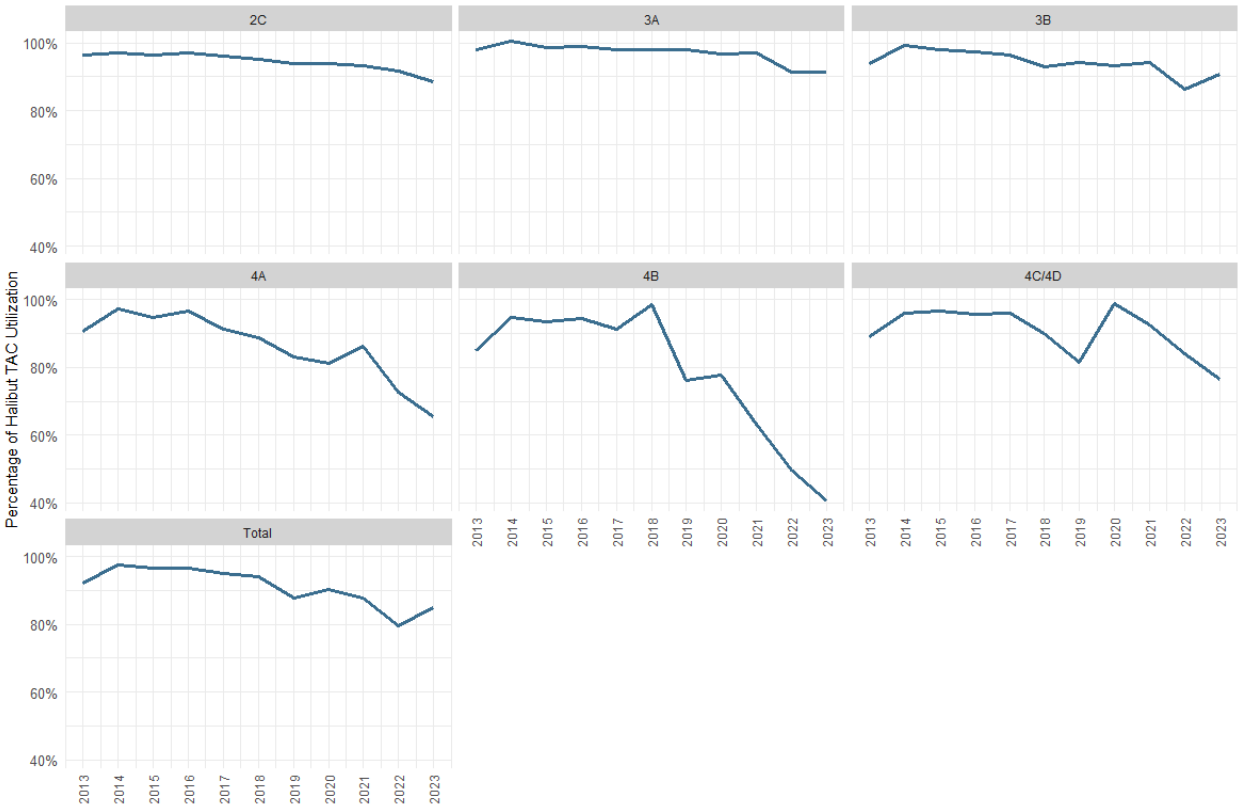
Source: Developed by Northern Economics based on data from AKFIN (2024)

Figure 30. Sablefish IFQ Landings and TAC by Regulatory Area



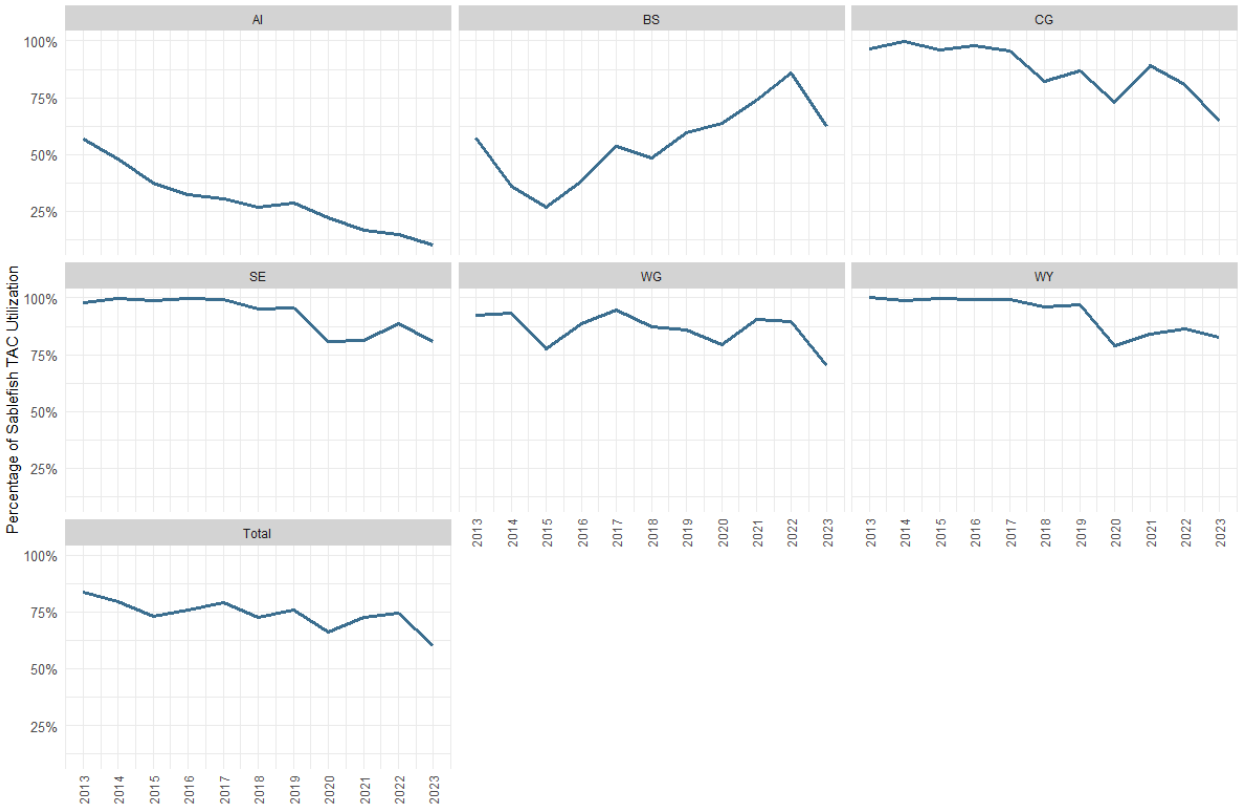
Source: Developed by Northern Economics based on data from AKFIN (2024)

Figure 31. Halibut TAC Utilization Rate by Regulatory Area



Source: Developed by Northern Economics based on data from AKFIN (2024)

Figure 32. Sablefish TAC Utilization Rate by Regulatory Area



Source: Developed by Northern Economics based on data from AKFIN (2024)

2.4.2.3 Overage Violations

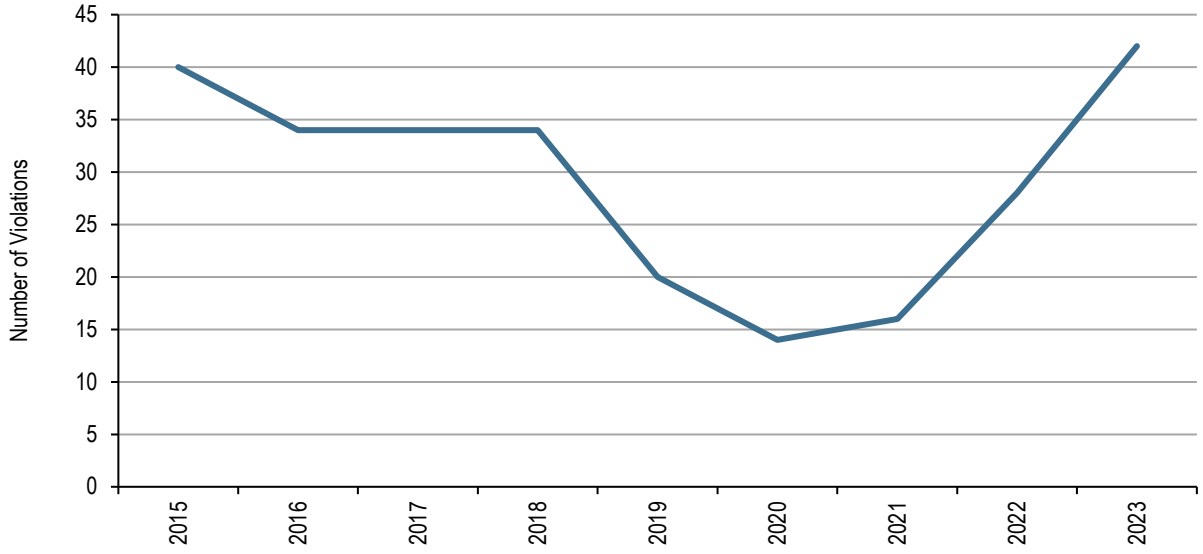
If a person exceeds their remaining IFQ account balance at the time of landing by over 10%, this becomes an overage violation and an enforcement action rather than an administrative adjustment to an IFQ account. An overage violation is detected at the time of landing if the IFQ landing is in excess of 10% of the remaining balance on the IFQ account at the time of landing. When a QS holder exceeds this balance by more than 10%, the entire overage is seized by the government. In other words, if a QS holder exceeds their balance by 11%, they have to forfeit that entire 11% overage (in terms of landed pounds) to the government.

For any overages greater than 10% and up to 33%, the QS holder has to forfeit their entire overage. For overages greater than 33% and up to 66% and exceeding 1,000 pounds, the QS holder has to forfeit the overage and pay a fine of $1 per pound of the overage (assuming no prior violations). For overages greater than 66% and exceeding 1,000 pounds, the QS holder has to forfeit the overage and pay a fine of $1.50 per pound of the overage (assuming no prior violations).

NOAA's Office of Law Enforcement (OLE) administers all overage violations above the 10% allowable adjustment threshold. OLE does not differentiate in their database between overages within the various ranges of penalties, nor does it track the amount of IFQ pounds associated with the overages.

All harvests are accounted for in NMFS's catch accounting system and calculated as part of total harvests that are reported annually. Figure 33 shows trends in overage violations in the IFQ fisheries in recent years.

Figure 33. Halibut and Sablefish IFQ Overage Violations



Source: NOAA OLE Electronic Case Management System

2.4.3 Gear and Allocation Conflicts

2.4.3.1 Gear Conflicts

Pre-IFQ and Post-IFQ gear conflicts up to 2015 were described in the 2016 IFQ Program Review. Here, any changes since the previous review are briefly summarized. As noted in the previous review, data unavailability strongly limits the evaluation of gear conflicts. Data on self-reported gear conflicts are not tracked through time and Vessel Monitoring Systems are not required on all vessels fishing for IFQ, only in some areas (see 50 CFR 679.28(f)(6)(viii-ix)), limiting the amount of spatial data available to analyze. Additionally, other spatial data on reported fishing locations are not fine-scale enough to assess gear conflicts. As in the previous review, the most recent evidence to support a reduction in gear conflicts as a result of the IFQ Program comes from a study of program performance in the first two years where stakeholders reported "uncrowded fishing grounds" as an outcome of the program (Knapp 1997).

2.4.3.2 Allocation Conflicts

As discussed in the 2016 IFQ Program Review, issues surrounding initial allocations emerged in the first several years after the program was implemented as a result of persons seeking QS allocations.

As a result of these applications, 10.6% of the 1,800 applicants who were denied appealed and only 1% of these applicants continued to appeal in federal courts. The previous review concluded that the limited number of appeals and unsuccessful litigation of initial allocation suggests that the impetus for appeals had declined over time.

Since 2016, allocation conflicts relevant to the IFQ Program concern bycatch and bycatch limits of halibut and sablefish in the non-IFQ trawl fisheries. These concerns were motivated by how protected species catch (PSC) limits for halibut in the Amendment 80 sector were set—PSC limits were based on a fixed amount of halibut mortality. As a result, under lower levels of abundance, halibut PSC would become a larger proportion of total removals and could result in lower catch limits for directed halibut fisheries. In 2016, the Council began exploring scientific abundance-based PSC limits for halibut in the Amendment 80 sector as a result of concerns about the impacts to the directed halibut fisheries, including the halibut IFQ fishery (NPFMC 2020). In 2022, the Council took final action to set abundance-based management measures for Amendment 80 PSC limits (NPFMC 2022).

2.4.4 Product Wholesomeness

This section draws on descriptions of delivered product forms recorded on fish tickets to provide an overview of changes in how halibut and sablefish have been processed prior to delivery to registered buyers. Descriptions are reported in terms of delivery condition, e.g., whole vs. headed and gutted. Changes in ex-vessel prices in both IFQ fisheries are examined in *Landings and Ex-vessel Revenue* in Section 2.6.2.1 and Section 2.6.2.2.

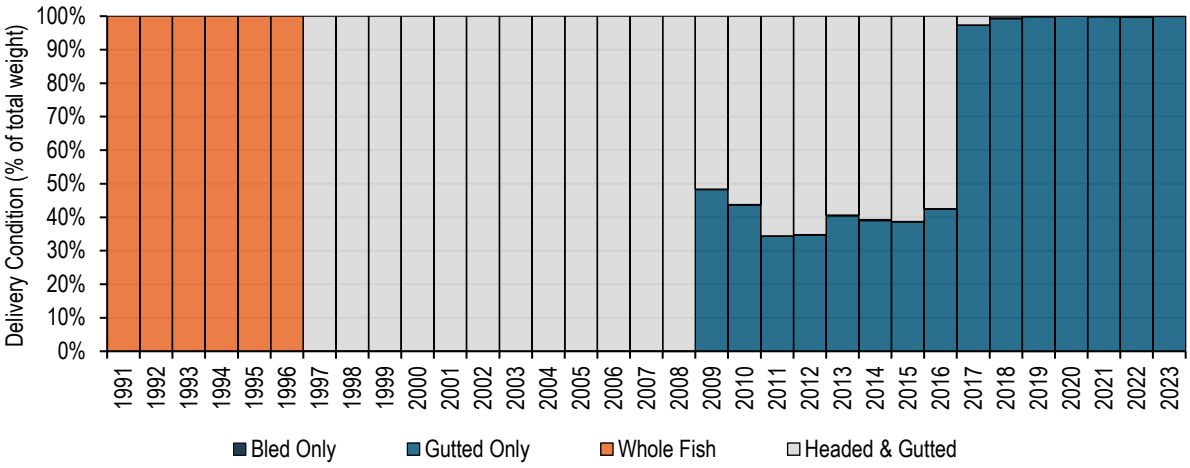
2.4.4.1 Halibut Delivery Conditions

Delivery conditions of halibut are reported at the point it is weighted and recorded on the fish ticket and describe the extent to which fish has been processed. This analysis only examined fish delivered in marketable conditions, meaning halibut marked for personal use, meal, bait, donation or as discarded were not included. However, from 1991-2022, these types of delivery conditions made up less than 0.1% by weight of total reported halibut catch. To facilitate analysis, delivery conditions were aggregated as well. All headed & gutted conditions (i.e., Western cut, Eastern cut, tail removed, etc.) were categorized as "headed & gutted", all conditions of "whole fish" (i.e., food fish, #2 fish, and #3 fish) were aggregated as "whole fish". As this analysis examined round pound deliveries, piecemeal deliveries (i.e., fillets, heads, chins, etc.) were not included. These delivery types are also rare in the fishery.

As shown in Figure 34, nearly all halibut landings data for 1991 through 1996 that were provided for this assessment were reported as being delivered as whole fish. From 1997 to 2009, nearly 100% of halibut was recorded delivered as headed & gutted. While the current review has reported the data provided, it is more likely that from 1991-1996 the vast majority of halibut were delivered as headed and gutted fish. From 2009 through 2016, buyers and processors also began receiving fish that had been gutted only, with percentages fluctuating between 48% and 34% in this condition. In 2017, this

percentage rose dramatically to over 97% and remained at over 99% received as gutted only through 2023. Only in 2019 were bled-only conditions reported and in quantities of less than 0.01% of total deliveries for that year.

Figure 34. Halibut Delivery Condition Percentage by Weight (Round Pounds)



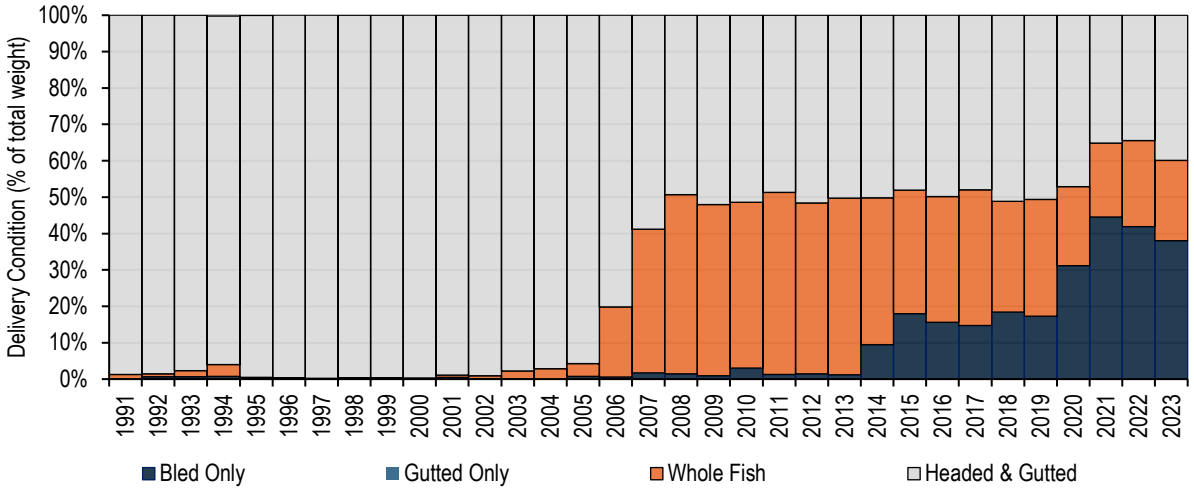
Source: Developed by Northern Economics based on data from AKFIN (2024)

2.4.4.2 Sablefish Delivery Conditions

Similar to halibut, only fish delivered in marketable conditions were included in this analysis, with discards, donations, bait, meal or personal use making up less than 0.01% of total recorded sablefish catch by weight. The same delivery code aggregations used in the halibut analysis for headed & gutted deliveries and whole fish deliveries were also used for the sablefish analysis. While piecemeal deliveries, such as fillets or other processed conditions, are more common in the sablefish fishery (reported in 1991, 1994-1997, 2000, 2003, 2006, 2007, 2016 and 2022), they still make up a very small percentage of total deliveries (less than 0.01%) reported weights in those years and were not included in the analysis.

As seen in Figure 35, over 95% of sablefish fish ticket deliveries were reported as headed and gutted from 1991 through 2005. Whole fish and bled-only deliveries occurred during this period, but in relatively small amounts. In 2006, whole fish deliveries increased to nearly 20% and continued to increase until 2014, reaching a max of 50% of sablefish deliveries in 2011. In 2014, bled-only deliveries began increasing through 2023 as whole fish deliveries decreased. By 2021, bled-only condition sablefish made up the largest component of deliveries (44.5%) but since then bled only percentage have declined to 38%. Headed & gutted, which had previously composed approximately 50% of all deliveries from 2007 through 2020, dropped to 35 % in 2021. While gutted only deliveries occurred in 63% of years between 1991 and 2023, they made up only a small percentage of total delivery weights (<0.01%) in each of those years.

Figure 35. Sablefish Delivery Condition Percentage by Weight (Round Pounds)



Source: Developed by Northern Economics based on data from AKFIN (2024)

2.4.5 Fleet Diversity

This section addresses the following objective of the final EIS for the IFQ Program:

- Objective 4: Maintain the diversity in the fleet with respect to vessel categories.

As described in *Area and Vessel Class Categorizations* in Section 1.2.4.3, QS is designated both by vessel class and regulatory area and inter-class trading is prohibited, with the intention of preventing the redistribution of fishing privileges amongst vessel classes. A goal was to prevent the displacement of smaller vessels tied to coastal communities and to promote new entry opportunities and wider participation. Both halibut and sablefish fisheries have catcher-processor designated QS (Class A) and several catcher vessel QS classes. The halibut fishery has 3 designated catcher vessel QS classes: Class B for vessels greater than 60 feet LOA, Class C for vessels greater than 35 to 60 feet LOA; and Class D for vessels less or equal than 35 feet LOA. The sablefish IFQ fishery has two classes of catcher vessel QS: Class B for vessels greater than 60 feet LOA and Class C for vessels equal to or less than 60 feet LOA. In both IFQ fisheries, there are no length restrictions with Class A QS.

The section examines the current fleet composition by vessel classes, the QS distributions and harvests by vessel class, and examines how participation in the IFQ fisheries has changed since the 2016 IFQ Program Review.

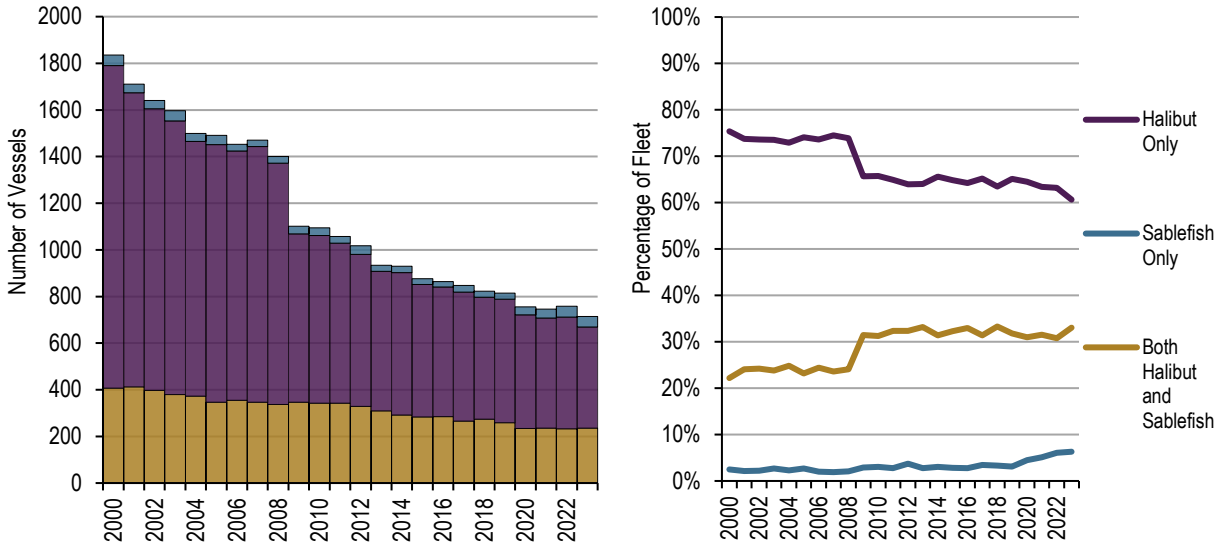
2.4.5.1 IFQ Fleet Composition

As noted above in the Section 2.4.2.1, both the halibut and sablefish fleets have been decreasing in size as QS is consolidated among fewer QS holders. Halibut vessels have historically made up the largest percentage of the IFQ fleet, a trend which remains true for the fishery today. As seen in Figure 36, since 2000, the number of vessels actively harvesting halibut have continued to compose over

90% of the IFQ fleet, averaging 97% between 2000 and 2023. Additionally, the majority of those vessels do not also participate in the sablefish fishery, though the ratio of halibut-only vessels in the fleet has been decreasing since 2008. In 2009, the percentage of halibut-only participants in the IFQ fleet dropped from 74% to 66%, corresponding with an increase in vessels actively harvesting both halibut and sablefish. Since 2009, the halibut-only sector of the fleet has continued to decrease, both in number of vessels and in percentage of fleet, dropping to 433 vessels and 61% of the fleet as of 2023. As discussed in Section 2.2, this decrease coincides with the recent decline of halibut catches, which in 2020, reached a record low for the for the program. The decrease in halibut vessels is likely a response to decreasing halibut harvests and TAC.

Sablefish vessels have consistently been the smallest sector of the IFQ fleet. As seen in Figure 36, the majority of vessels actively harvesting IFQ sablefish also harvest IFQ halibut, with an average of only 3% of the IFQ fleet harvesting only sablefish between 2000 and 2023. Beginning in 2020, both the number of vessels and percentage of the IFQ fleet participating as sablefish-only vessels increased, rising from 25 vessels to 34 vessels and from 3% of the IFQ fleet to 5%. By 2023, this had increased to 45 vessels and 6% of the IFQ fleet. This is likely a response to conditions in the sablefish fishery, which in 2020 began seeing a sharp increase in both TAC and harvests, potentially providing opportunities for new entrants into the IFQ sablefish fishery and providing incentive for vessels capable of fishing in both fisheries to move from IFQ halibut which has continued to see decreasing harvests.

Figure 36. Fleet Composition of the Halibut and Sablefish IFQ Fleet

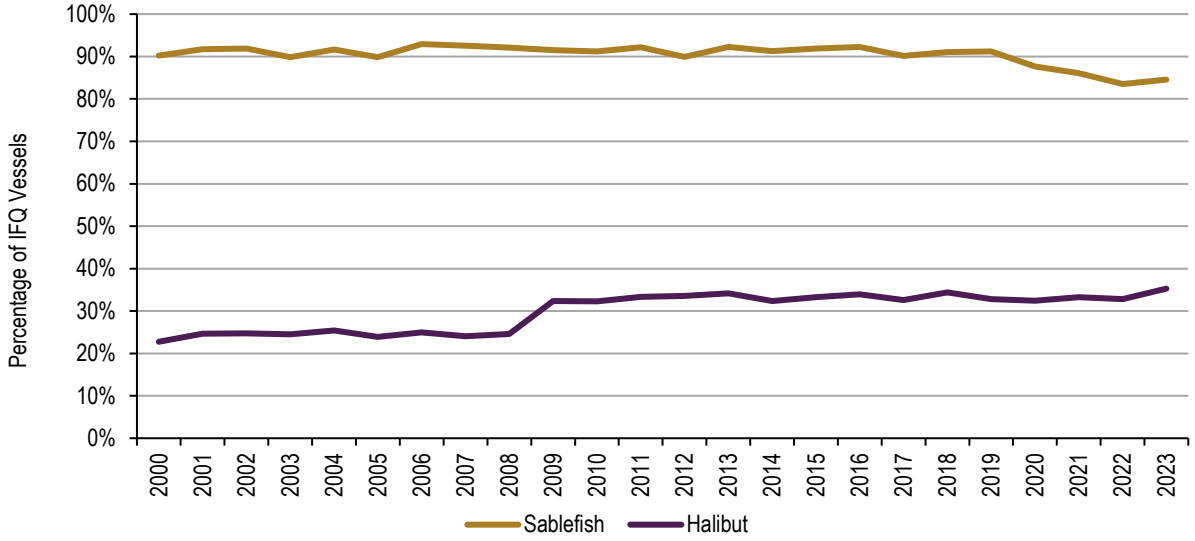


Source: Developed by Northern Economics based on data from AKFIN (2024)

As shown in Figure 36, the proportion of IFQ vessels participating in both sablefish and halibut fisheries has remained relatively stable since 2014, averaging 32% of the IFQ fleet during this period.

However, as the fleet continues to consolidate, the relative proportion of vessels cross-participating in each fishery has shifted. As the number of vessels landing only halibut decreases, the number of vessels landing halibut and sablefish has increased over time (also see Figure 37). Since 2014, the proportion of all IFQ vessels landing halibut and prosecuting both IFQ fisheries increased slightly from 32.4% to 35.3%, a 9% increase (Table 8). Notably, in recent years, a smaller proportion of IFQ sablefish participants have also been prosecuting IFQ halibut. Since 2014, 7% fewer IFQ sablefish participants are cross-participating in the IFQ halibut fishery. As noted above, the number of sablefish-only participants began increasing in 2020, a portion of whom may be previous cross-fishery participants choosing to only participate in the sablefish IFQ fishery.

Figure 37. Percent of IFQ Vessels Participating in Both IFQ Fisheries



Source: Developed by Northern Economics based on data from AKFIN (2024)

Table 8. Percent of IFQ Fleets Participating in Both IFQ Fisheries

Fishery	2014	2023	Percent Change
Halibut	32.4%	35.3%	9.0%
Sablefish	91.3%	84.6%	-7.3%

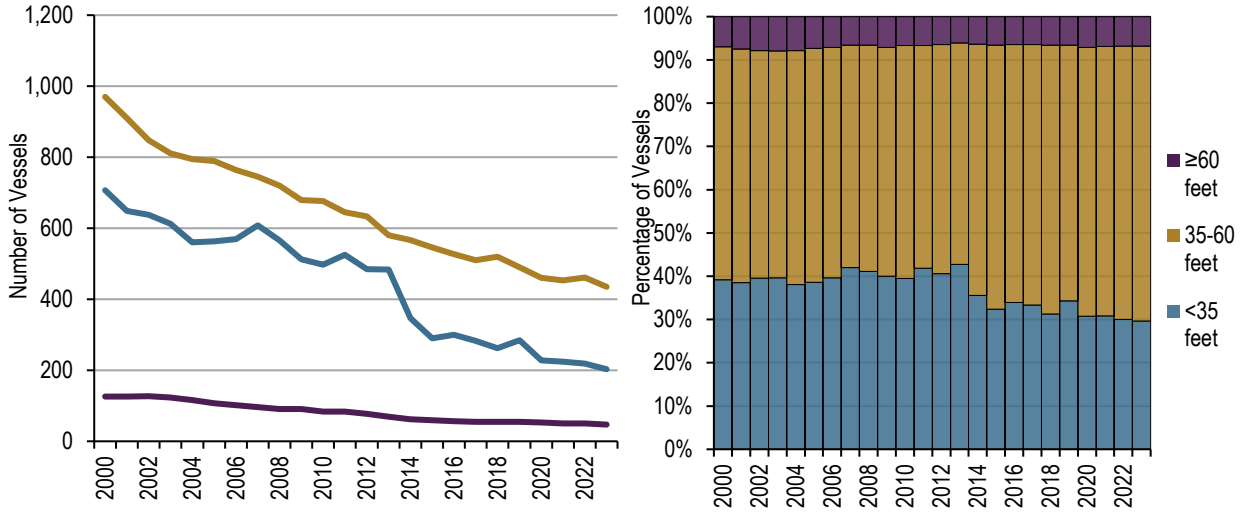
Source: Developed by Northern Economics based on data from AKFIN (2024)

2.4.5.2 Size of Participating Vessels

As noted previously, the 2016 Program Review highlighted that IFQ Program implementation resulted in significant consolidation in the IFQ fleets and this change affected vessels of all lengths. In the halibut fishery, the number of vessels of all lengths dropped by an average 55% from 1995 to 2014, and in the sablefish fishery, vessels of all lengths dropped by an average 49%. As seen in Figure

38 and Figure 39, consolidation among all sizes of vessels in both the IFQ halibut and sablefish fleets has continued. In the halibut IFQ fleet, the number of vessels greater than 35 feet LOA decreased at roughly the same rate since 2014, averaging 24.1% (Table 9). Vessels 35 feet or less LOA decreased the most, showing a 30.1% decrease since 2014. In the sablefish IFQ fishery, vessels less than 60 feet LOA decreased 11.4% since 2014 and vessels 60 or greater LOA decreased by 16.1% (Table 10). In both IFQ fisheries, the vessel size composition of the fleets has remained relatively stable since 2014, with only a slight percentage increase for vessels greater than 35 feet and less than 60 feet LOA in the halibut fleet and a slight proportional increase for vessels less than 60 feet LOA in the sablefish fishery.

Figure 38. Diversity Among IFQ Halibut Vessel Classes (By Length)



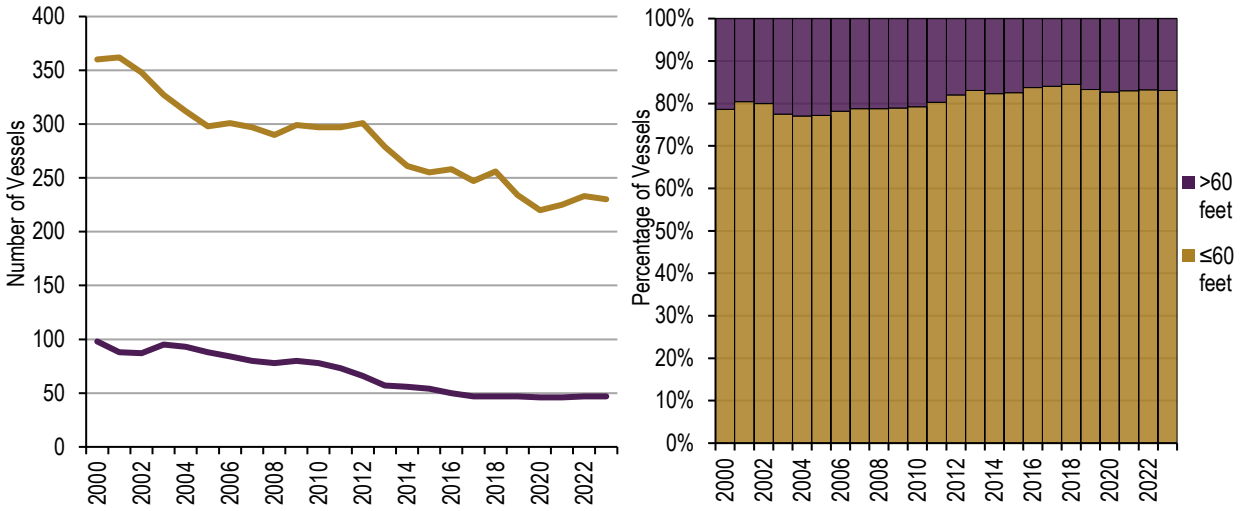
Source: Developed by Northern Economics based on data from AKFIN (2024)

Table 9. Number of Active Halibut IFQ Vessels by Vessel Length Overall

	2014		2023		Percent change in Number of Vessels
QS Class Category	Number of Vessels	% of Vessels	Number of Vessels	% of Vessels	
≤ 35 FT	276	30.6%	193	28.8%	-30.1%
> 35 and ≥ 60 FT	565	62.6%	430	64.2%	-23.9%
>60 FT	62	6.9%	47	7.0%	-24.2%
Total	**903**	**100%**	**670**	**100%**	**-25.8%**

Source: Developed by Northern Economics based on data from AKFIN (2024)

Figure 39. Diversity Among IFQ Sablefish Vessel Classes (By Length)



Source: Developed by Northern Economics based on data from AKFIN (2024)

Table 10. Number of Active Sablefish IFQ Vessels by Vessel Length Overall

	2014		2023		Percent Change in Number of Vessels
QS Class Category	Number of Vessels	% of Vessels	Number of Vessels	% of Vessels	
≤60 FT	264	82.5%	234	83.3%	-11.4%
>60 FT	56	17.5%	47	16.7%	-16.1%
Total	**320**	**100%**	**281**	**100%**	**-12.2%**

Source: Developed by Northern Economics based on data from AKFIN (2024)

2.4.5.3 QS Distribution by Vessel Length

As noted in the 2016 Program Review, only minor changes have occurred in the QS distribution across vessel classes in both IFQ fisheries, primarily due to the prohibition of trading QS between vessel classes. The changes that occurred following implementation are the result of the CDQ "swappable" QS (described in Section 1.2.4.2) and administrative revocations imposed on inactive QS holders. However, these revocations only affected approximately 2,000 pounds of IFQ most of which was primarily Class D halibut QS.

As seen in Table 11, looking across both fisheries at an aggregate level, between 2015 and 2023 there have been changes in QS distributions by vessel class, either since initial allocation or since the previous review. Class C halibut QS retains the highest allocation, followed by Class B. Approximately 8% of QS is allocated to Class D QS while Class A shares hold only 3% of the QS pool. While QS is more evenly distributed in the sablefish fishery, Class B holds the highest proportion and Class A the least.

Table 11. QS Distribution by Vessel Class at Initial Allocation

	Halibut			Sablefish		
QS Class	Initial % of QS Pool	2015 % of QS Pool	2023 % of QS Pool	Initial % of QS Pool	2015 % of QS Pool	2023 % of QS Pool
A	2.5%	2.8%	2.8%	20.1%	21.2%	21.1%
B	37.0%	36.9%	37.0%	43.0%	41.7%	41.9%
C	52.0%	52.4%	52.4%	36.9%	37.0%	37.0%
D	8.5%	7.9%	7.9%			

Source: Developed by Northern Economics based on data from AKFIN (2024)

In the halibut fishery, there are 27 area/vessel QS category combinations, excluding Area 4E, which is allocated entirely to the CDQ Program. As shown in Table 12, between 2015 and 2023 QS distributions across regulatory areas remained largely unchanged, with most distributions remaining either the same or within 2% of their initial allocations. The only area which has seen relatively large shifts in QS distribution is Area 4C, where Class D QS has increased 8%, and Class B and C QS has decreased by around 4% each since initial allocation.

As noted in the previous review, since QS was initially allocated based upon historic participation, QS distributions reflect the different characteristics of the fleet in different areas. In Southern Alaska areas, such as 2C, C and D class QS designations make up 93.4% of the available quota where more fishing opportunities are available nearshore and can be prosecuted by smaller vessels. In areas like 4D, halibut fisheries were historically prosecuted by larger vessels, such as freezer long-liners, that were capable of operating offshore for multiple days. Here, Class A and B Qs makes up 91% of available QS, with no Class D QS available at all.

Table 12. Halibut QS Distribution by Vessel Class and Area at Initial Allocation

Area	Vessel Class	Initial % of Area QS	2015 % of Area QS	2023 % of Area QS
2C	A	2.1%	2.1%	2.1%
	B	5.0%	4.5%	4.5%
	C	76.6%	78.5%	78.5%
	D	16.4%	15.0%	14.9%
3A	A	2.3%	2.6%	2.6%
	B	36.8%	37.1%	37.1%
	C	53.5%	53.5%	53.5%
	D	7.4%	6.8%	6.9%
3B	A	2.9%	2.9%	2.9%
	B	55.5%	55.3%	55.3%
	C	37.9%	38.7%	38.7%
	D	3.7%	3.0%	3.0%
4A	A	4.1%	4.2%	4.2%
	B	58.4%	58.6%	58.6%
	C	29.7%	30.0%	30.0%
	D	7.7%	7.2%	7.2%
4B	A	3.6%	6.0%	6.0%
	B	78.7%	76.6%	76.7%
	C	14.8%	14.5%	14.5%
	D	2.9%	2.9%	2.9%
4C	A	0.5%	0.5%	0.5%
	B	44.5%	36.7%	40.4%
	C	25.4%	22.9%	21.6%
	D	29.6%	39.9%	37.6%
4D	A	7.6%	8.6%	8.3%
	B	84.8%	82.2%	82.7%
	C	7.6%	9.2%	9.0%
	D	0%	0%	0%

Source: Developed by Northern Economics based on data from NMFS (2024d)

In the sablefish fishery, there are 18 different area/vessel category combinations of QS designations. Between 2015 and 2023 the allocations among these designations remained largely unchanged, showing no change greater than 2% (Table 13). However, these allocations still reflect the historic participation between areas in the fishery. The sablefish IFQ fishery has mostly been prosecuted by larger vessels compared to the halibut IFQ fishery, and in most regulatory areas, Class B shares make up the majority of QS holdings. Areas like the AI and BS show larger participation by CPs, with Class A shares making up the largest part of QS designations in the Aleutian Islands regulatory area. Conversely, smaller vessels, represented by the majority Class C shares, are the primary vessel class

prosecuting the Southeast Outside District (SE) due to the easier accessibility of the fishing grounds compared to other areas in the sablefish IFQ fishery.

Table 13. Sablefish QS Distribution by Vessel Class and Area at Initial Allocation

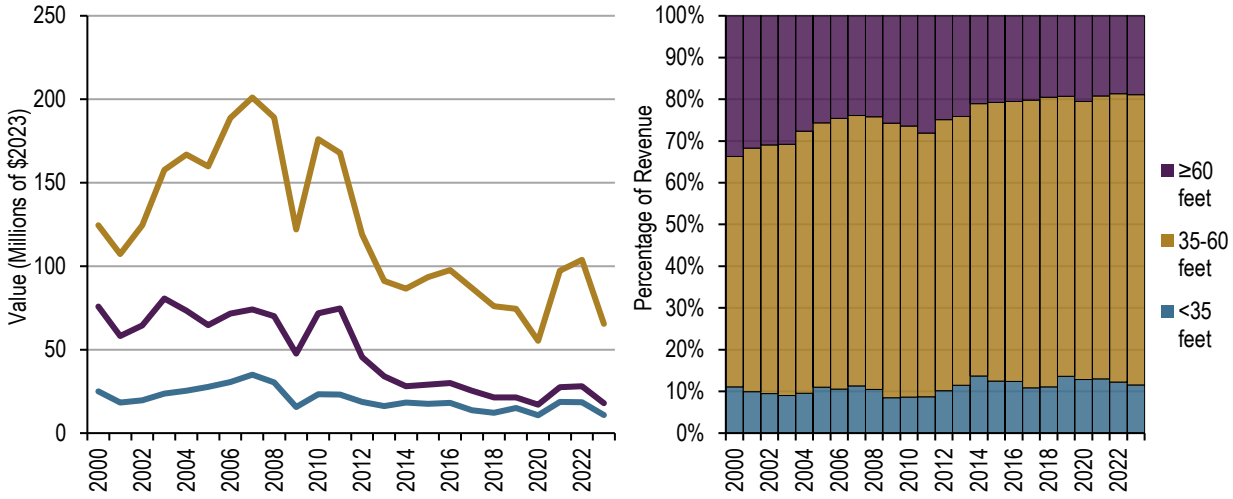
Area	Vessel Class	Initial % of Area QS	2015 % of Area QS	2023 % of Area QS
AI	A	54.8%	57.7%	56.2%
	B	37.1%	33.8%	35.5%
	C	8.0%	8.5%	8.3%
BS	A	37.8%	40.9%	39.8%
	B	44.2%	39.8%	41.3%
	C	18.0%	19.4%	18.8%
CG	A	14.0%	15.7%	15.7%
	B	49.0%	47.5%	47.3%
	C	37.0%	36.8%	37.0%
SE	A	9.3%	9.3%	9.3%
	B	20.7%	20.3%	20.3%
	C	70.0%	70.4%	70.4%
WG	A	38.1%	37.9%	38.0%
	B	43.6%	43.3%	43.3%
	C	18.4%	18.8%	18.7%
WY	A	8.1%	8.2%	8.2%
	B	61.0%	60.6%	60.6%
	C	30.9%	31.2%	31.2%

Source: Developed by Northern Economics based on data from AKFIN (2024)

2.4.5.4 Diversity of Fishery Revenue Among Participating Vessels

This section outlines changes in ex-vessel revenues across vessel classes in both IFQ fisheries since the previous review. As shown in Figure 40, revenue for all vessel classes in the halibut fishery decreased between 2014 and 2023, coinciding with the decrease in revenues for the fishery during that same period. While revenues for the aggregate halibut IFQ fleet decreased by 30% (Table 14), not all vessel classes saw revenues decrease at the same rate. As a class, vessels 35 feet LOA or less saw the greatest proportional decrease in revenue, with earnings decreasing by 47% between 2014 and 2023. Vessels between 35 and 60 feet LOA saw the least decrease at 24% and vessels larger than 60 feet LOA saw revenues decrease by 36%. Since 2014, an increasing proportion of halibut IFQ revenue has been earned by Class C vessels, which earned 70% of fishery revenue in 2023.

Figure 40. Diversity of Fishery Revenue Among IFQ Halibut Vessel Classes (By Length)



Source: Developed by Northern Economics based on data from AKFIN (2024)

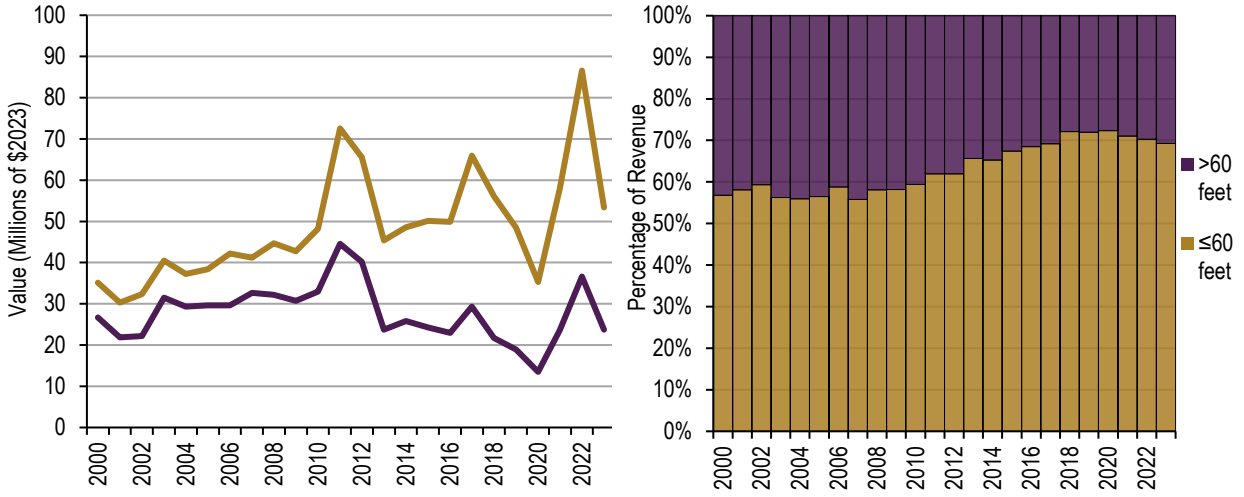
Table 14. Halibut IFQ Vessel Revenue by Vessel Length Overall

	2014		2023		
QS Class Category	Revenue (Millions of $2023)	% of Fishery Revenue	Revenue (Millions of $2023)	% of Fishery Revenue	Percent change in Fishery Revenue
≤ 35 FT	18.2	13.72%	10.9	11.52%	-40.4%
> 35 and ≤ 60 FT	86.5	65.19%	65.5	69.54%	-24.3%
>60 FT	28.0	21.08%	17.8	18.94%	-36.3%
Total	**132.8**	**100%**	**94.2**	**100%**	**-29.1%**

Source: Developed by Northern Economics based on data from AKFIN (2024)

In the IFQ sablefish fishery, aggregate ex-vessel revenues have increased by 3.7%, though not all vessel classes have proportionally shared in this increase (Table 15). While revenues for smaller vessels 60 feet or less LOA increased by 10% between 2014 and 2023, vessels of greater than 60 feet LOA decreased by 8% during the same period. Additionally, as shown in Figure 41, the proportion of total fishery revenue earned by vessels of 60 feet or less LOA has increased by 4% since 2014, and by 12% since 2000. This coincides with the proportional increase of sablefish vessels within the IFQ fleet discussed in Section 2.4.5.1. The increase in the percentage of fishery revenue attained by smaller vessels in the IFQ sablefish fleet may in part be due to new entrants. As shown above in Table 9, vessels less than 35 feet LOA in the halibut IFQ fleet showed the largest decrease in relative fleet size since 2014, and some of which may have switched into the sablefish IFQ fishery in response to lower IFQ halibut TAC and harvests.

Figure 41. Diversity of Earnings Among IFQ Sablefish Vessel Classes (By Length)



Source: Developed by Northern Economics based on data from AKFIN (2024)

Table 15. Sablefish IFQ Vessel Revenue by Vessel Length Overall

	2014		2023		
QS Class Category	Revenue (Millions of $2023)	% of Fishery Revenue	Revenue (Millions of $2023)	% of Fishery Revenue	Percent change in Fishery Revenue
≤60 FT	48.54	65.3%	53.37	69.2%	9.9%
>60 FT	25.81	34.71%	23.71	30.8%	-8.1%
Total	**74.35**	**100%**	**77.08**	**100%**	**3.7%**

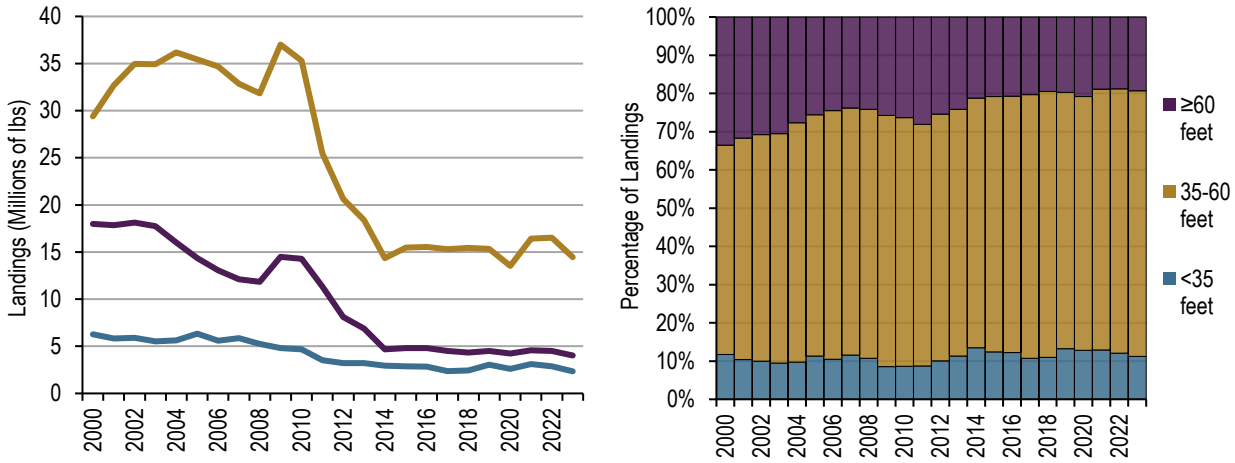
Source: Developed by Northern Economics based on data from AKFIN (2024)

As noted in the previous review, earnings between different vessel classes do not strictly align with QS distributions between vessel classes. As noted in the previous program review, there are several factors that can impact the distribution of ex-vessel revenue. Since Class A QS can be fished on vessels of any size, revenues earned from Class A IFQ may also be distributed among any length of vessel. This is also more relevant in the sablefish fishery which has a proportionally larger amount of Class A QS than the halibut IFQ fishery. Additionally, in ex-vessel prices are subject to high amounts of variability may differ between regulatory areas. This means that if ex-vessel prices are higher in areas with proportionally more QS of one vessel class, the distribution of revenue in the fishery may skew more toward vessels of that class. Lastly, underutilization of TAC in some areas dominated by a particular vessel class can account for some of the differences in the distribution of QS and revenues.

2.4.5.5 Diversity of Landings Among Participating IFQ Vessels

As shown in Figure 42, landings across vessel classes in the halibut IFQ fishery largely reflect revenues in the fishery, discussed above in Section 2.4.5.4. Since 2014, vessels between 35 and 60 feet LOA have landed the majority of the harvest in the fishery. Between 2014 and 2023, harvests remained relatively stable during this period for this class of vessel, though their proportion of the total catch in the fishery has increased by 5% since 2014 (Table 16). Both vessels under 35 feet LOA and vessels 60 feet or greater LOA have decreased in landings since 2014, with smaller vessels showing the greatest decrease in harvest (21%).

Figure 42. Diversity of Landings Among IFQ Halibut Vessel Classes (By Length)



Source: Developed by Northern Economics based on data from AKFIN (2024)

Table 16. Halibut IFQ Landings by Vessel Length Overall

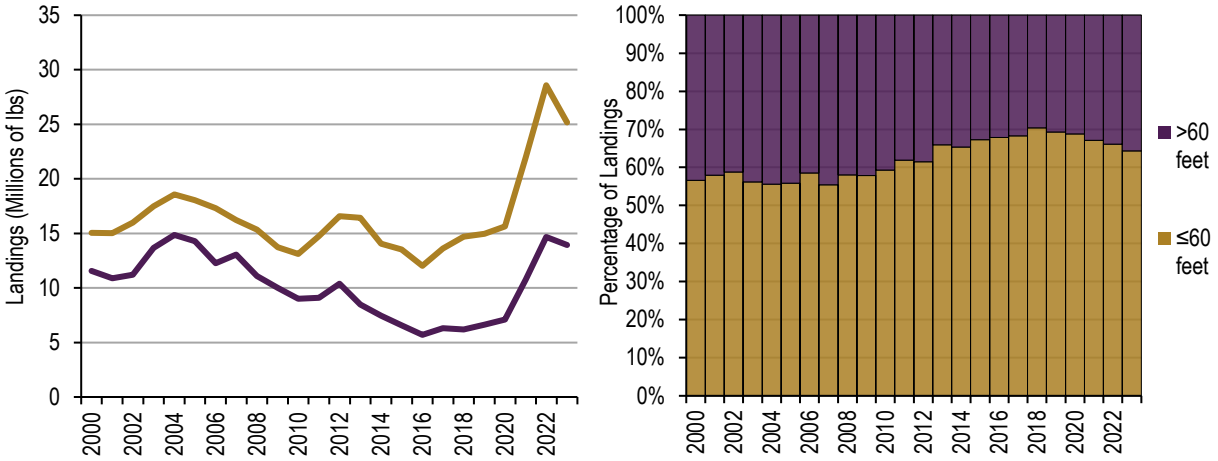
	2014		2023		
QS Class Category	Harvest (Millions of Round Pounds)	% of Harvest	Harvest (Millions of Round Pounds)	% of Harvest	Percent change in Harvest
≤ 35 FT	2.96	13.5%	2.34	11.3%	-20.9%
> 35 and ≤ 60 FT	14.34	65.3%	14.46	69.4%	0.8%
>60 FT	4.67	21.3%	4.02	19.3%	-13.9%
Total	**21.97**	**100%**	**20.82**	**100%**	**-5.2%**

Source: Developed by Northern Economics based on data from AKFIN (2024)

In the sablefish IFQ fishery, harvests between vessel classes have shown much less inter-annual variability than revenues between vessel classes. As shown in Figure 43, harvests for both vessels over 60 feet LOA and 60 feet or less LOA increased between 2014 and 2023, though both vessel classes saw a downturn in landings in 2023. Vessels over 60 feet LOA increased sablefish IFQ harvests by 70% since 2014 and vessels 60 feet or less LOA increased harvests by 87% (Table 17). The

distribution of harvest between vessel classes during that period has remained stable, with vessels 60 feet or less LOA making an average 68% of IFQ sablefish landings. Since landings in the sablefish IFQ fishery have been increasing since 2016, the differences in inter-annual variability seen between revenue and harvests are likely due to factors extraneous to the fishery, such as fluctuations in ex-vessel prices.

Figure 43. Diversity of Landings Among IFQ Sablefish Vessel Classes (By Length)



Source: Developed by Northern Economics based on data from AKFIN (2024)

Table 17. Sablefish IFQ Landings by Vessel Length Overall

	2014		2023		
QS Class Category	Harvest (Millions of Round Pounds)	% of Harvest	Harvest (Millions of Round Pounds)	% of Harvest	Percent Change in Harvest
≤60 FT	14.06	65.34%	25.16	64.33%	78.9%
>60 FT	7.46	34.66%	13.95	35.67%	87.0%
Total	**21.52**	**100%**	**39.11**	**100%**	**81.7%**

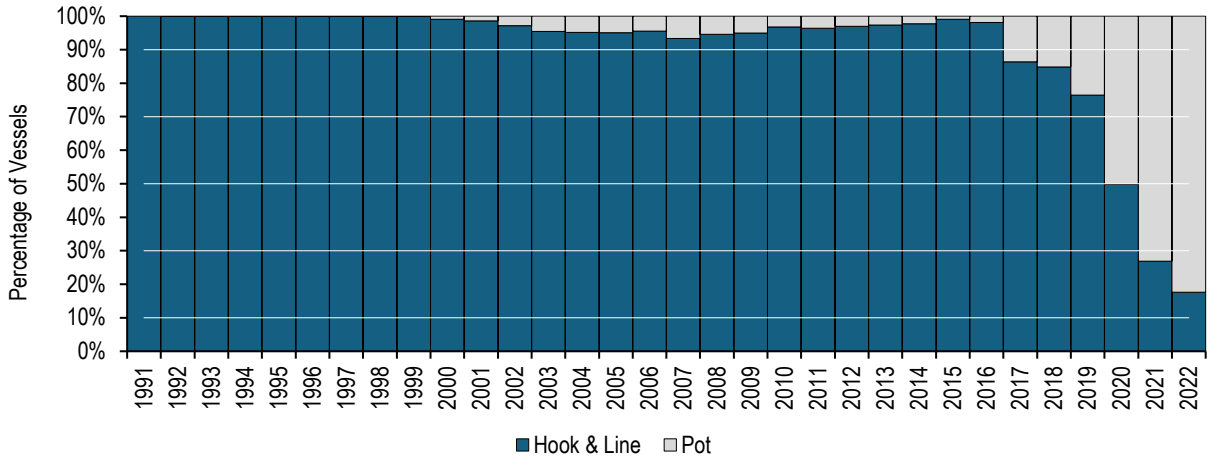
Source: Developed by Northern Economics based on data from AKFIN (2024)

2.4.5.6 Gear Usage

This section draws on descriptions of the gear recorded on fish tickets to provide an overview of the changes in gear usage in the IFQ fisheries. For this analysis, recorded gears used in the halibut and sablefish fisheries were classified in two ways: as either a hook & line gear type or a pot gear type. Use of pot gear in the sablefish fishery in all areas was approved with a plan amendment in 2016. Prior to this, the use of pot gear was limited to the BSAI. However, beginning with the 2017 fishing season, regulations were implemented (81 FR 95435) allowing the use of longline pot gear in the Gulf of Alaska (GOA) IFQ sablefish fishery to reduce costs associated with whale depredation, which fishery participants indicated have increased operating costs and reduced catch per unit effort

(NOAA 2016). As seen in Figure 44, from 2017 forward the overall use of pot gear in the sablefish fishery has increased dramatically. By 2020, 50% of all sablefish landings were made with pot gear and by 2022 82.4 % of all sablefish IFQ landings were made with pot gear.

Figure 44. Percentage of Gear Types Used in the Sablefish Fishery



Source: Developed by Northern Economics based on data from AKFIN (2024)

With approval of the pot gear use Amendment 118 in 2022, there have been some very minor deliveries of pot caught halibut, but in no year has pot-caught halibut exceeded 0.5% of the total.

2.4.6 Consolidation

This section addresses the following objectives of the final EIS for the IFQ Program:

- Objective 3: Broadly distribute quota share to prevent excessively large quota share from being given to some persons.
- Objective 7: Limit the concentration of quota share ownership and IFQ usage that will occur

The section summarizes QS allocations to individuals and entities for areas in which QS use caps and vessel IFQ caps have been approved. As of 2024, the caps shown in Table 3, above, remain in place.

To evaluate change in the concentration and distribution of QS holdings and implications for excessive consolidation and market power, both the Herfindahl-Hirschman Index (HHI) as well as the Gini coefficient are constructed at both the vessel and entity level. The Gini coefficient is a measure of inequality and ranges between 0 (perfect equality) and 1 (perfect inequality), whereas the HHI is a measure of concentration and indicator of the amount of competition in the market. The Gini coefficient is a comparison of cumulative proportions of the population (here number of QS owners) against cumulative proportions of QS holdings. The HHI is equal to the sum of market shares, so here, the sum of each QS owner's share of the QS holdings in a given year. The HHI ranges from 0 to 10,000. The US Department of Justice and other federal agencies generally consider markets

in which the HHI is between 1,500 and 2,500 points to be moderately concentrated and an HHI in excess of 2,500 points to be highly concentrated (US Department of Justice 2018).

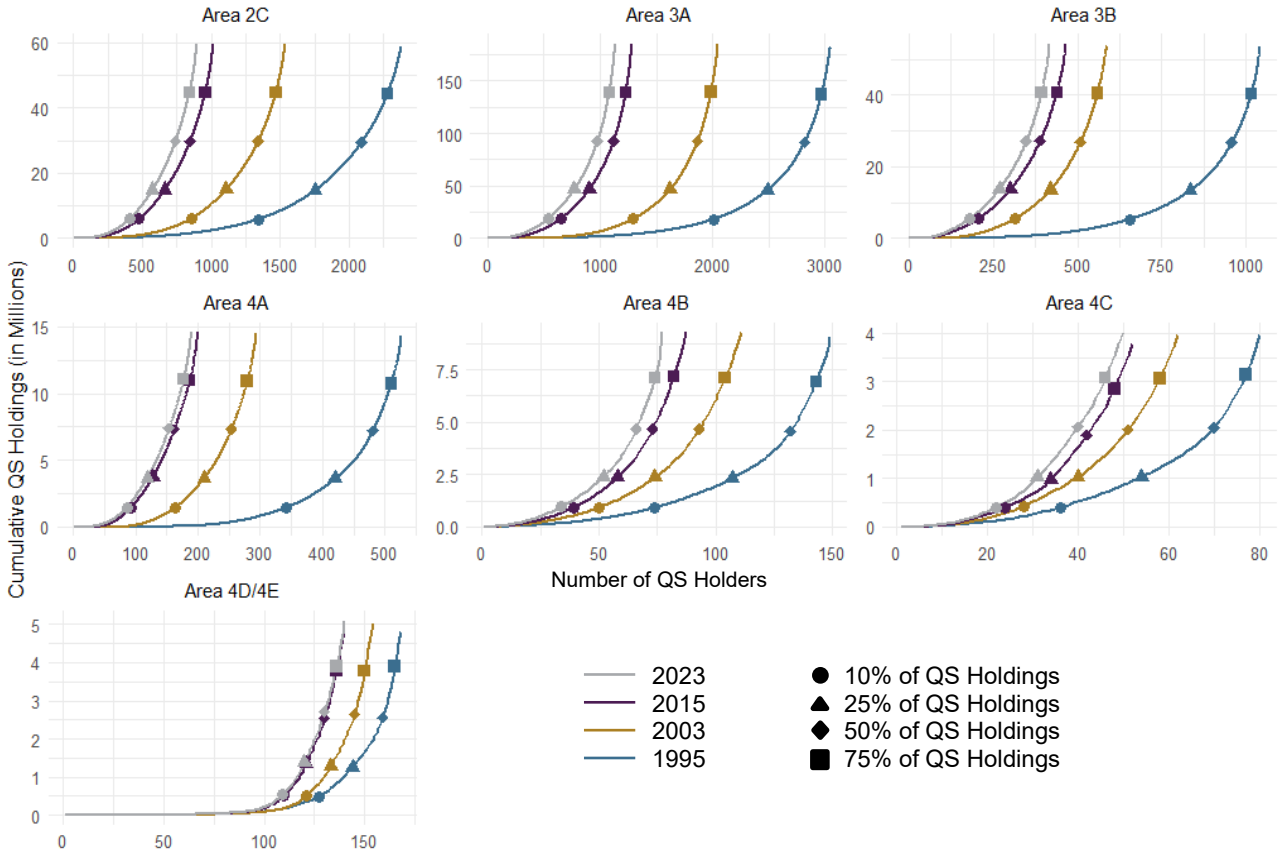
2.4.6.1 Distribution of Halibut QS

Allocations and QS Use Caps

Figure 45 shows the cumulative distribution of QS holdings by individuals and the number of QS holders in each management area in four years, 1995, 2003, 2015, 2023, to represent the changes in both the total number of QS holders and concentration of QS holdings. In each area there has been a decline in the number of individuals holding QS, leading to leftward shifts in the curve over time. The slope of each curve, however, has not changed much above the 25th percentile of QS holders, indicating that much of the change in the number of QS holders has been due to the exit of those holding very low amounts of QS, but not extreme changes in the QS holdings of those holding the most QS. This is reflected in the change in the Gini coefficient over time (Table 18), where most areas have observed small decreases overall, indicating that QS holding have become slightly more equal over time. In Area 2C, the Gini coefficient has decreased from 0.55 in 1995 to 0.53 in 2023. The greatest changes in the Gini coefficient are in areas 3B (which decreased from 0.66 to 0.47 overall) and 4B (which decreased from 0.53 to 0.43). Area 4B is the only area where QS holdings have become more unequal, where the Gini coefficient increased slightly from 0.54 to 0.56. In general, only small relative changes have taken place since 2015.

The indicator of concentration, (the HHI), however, by contrast has been demonstrating a slightly increasing trend since the beginning of the program across most management areas, indicating increasing concentration, but because values range from 12 to 407 (Table 18), all areas remain well below benchmarks for consolidation (a minimum of 1,500 for moderate concentration). The HHI has been increasing as shareholders who own the greatest proportion of shares have increased their holdings over time.

Figure 45. Consolidation of Halibut QS by Area



Source: Developed by Northern Economics based on data from NMFS (2024d)

Table 18. Gini and HHI Values of Halibut QS Allocations by Area

Area	Metric	1995	2003	2015	2023
2C	Gini	0.55	0.58	0.54	0.53
	HHI	12.72	19.88	22.91	24.78
3A	Gini	0.63	0.63	0.60	0.57
	HHI	15.36	20.14	22.71	23.67
3B	Gini	0.66	0.60	0.49	0.47
	HHI	45.84	48.95	49.22	55.03
4A	Gini	0.55	0.50	0.47	0.49
	HHI	78.59	90.00	105.22	109.19
4B	Gini	0.54	0.51	0.54	0.56
	HHI	193.82	190.65	252.04	406.75
4C	Gini	0.57	0.51	0.51	0.49
	HHI	322.39	317.29	366.63	357.25
4D	Gini	0.53	0.48	0.44	0.43
	HHI	348.89	366.62	366.57	351.05
4E	Gini	0.66	0.66	0.64	0.63
	HHI	373.03	373.03	375.20	379.71

Source: Developed by Northern Economics based on data from NMFS (2024d)

As discussed previously in Section 1.2.4.3, QS caps were put in place in the IFQ fisheries to limit consolidation among QS holders, with limits specific to regulatory areas. As shown in Table 19, individuals exceeding a cap at initial allocation (such as in Area 4) were grandfathered into the program with holdings in excess of the cap based on their history in the fishery. In Area 2C, 3A, and 3B combined where one QS holder exceeded the cap in years subsequent to 1995, this likely represents a change in the calculated cap below the holdings of a grandfathered QS holder. While these grandfathered individuals may continue to hold QS above the cap, they may not acquire additional QS unless they first divest to a level below the cap in the area where they are in excess.

The number of QS holders within 10% of the cap includes QS holders who exceed the cap, who are at the cap, and who are within a range of 10% below the cap. Despite the consolidation trends shown in Figure 45, there are relatively few individuals who either exceed or who are nearing the QS cap in any given area (Table 19). In areas 2C, 3A, and 3B combined, the number of QS holders within 10% of the cap matches the trend of consolidating QS and has continued to increase since initial allocation However, in area 4, the number of QS holders within 10% of the cap has decreased since 2015 and the number of QS holders and the number of QS holders exceeding the cap has continued to decrease since initial allocation. This trend may represent larger QS holders divesting area 4 QS in order to obtain additional QS in other areas, given the decreasing landing across most of area 4 as seen in Figure 29 and discussed in section 2.4.2.1. Area 4 is still the area with highest proportion of QS holders within 10% of the cap but given the decreasing trend of QS ownership near the cap, which

only accounted for 4% of area 4 QS holders as of 2023, IFQ halibut caps are likely not constraining factors for QS holders.

Table 19. Halibut QS Use Caps

Area	Number of Individuals	Initial Issuees	2015	2023
Area 2C	QS Holders	2,377	1,013	894
	Over the Cap	0	0	0
	Within 10%	0	0	1
Area 2C, 3A, 3B	QS Holders	4,768	2,246	2,003
	Over the Cap	0	1	1
	Within 10%	1	10	14
Area 4	QS Holders	526	362	352
	Over the Cap	9	6	4
	Within 10%	11	15	13

Note: This table only includes 1st-level QS holdings evaluated by a single identifier for each individual or entity. It does not include collective holdings due to subsidiaries, joint ventures, partnerships, or other similar business structures.

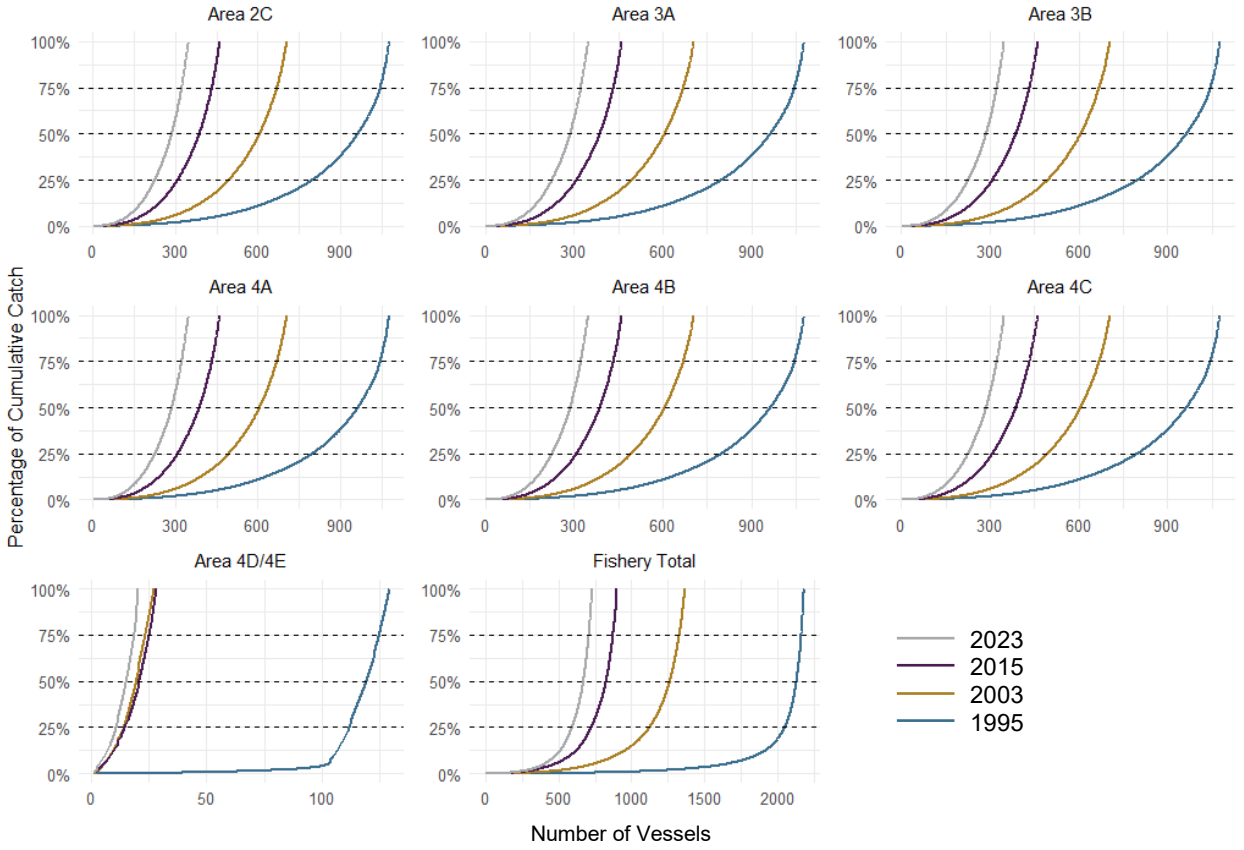
Source: Developed by Northern Economics based on data from NMFS (2024d)

Harvest and Vessel Caps

Similar to the trends in the consolidation of QS holdings, harvest has also been consolidated to fewer vessels across management areas over time, with far fewer vessels having smaller quantities of landings (number of vessels in the 25th percentile of harvest, Figure 46). While these changes have reduced inequality in landings amounts across vessels in some areas, as shown by declines in the Gini coefficient in areas 3A, 3B, 4A, 4B, and 4D, further consolidation in landings across vessels has increased inequality in areas 2C and 4C (Table 20). Where landings have become more concentrated on fewer vessels is shown by changes increases in the HHI. While the HHI remains far below market concentration benchmarks in most areas, in area 4C the HHI was nearly 4,000 in 2023, meaning landings were highly concentrated across vessels in that area, at 10 active vessels in 2023.[3]

[3] It is important to note while the HHI is used to determine market power, in this case while landings may be highly concentrated in one area, this does not mean the market for sablefish overall is highly concentrated.

Figure 46. Consolidation of Harvest in the Halibut IFQ Fishery by Area



Source: Developed by Northern Economics based on data from NMFS (2024d)

Table 20. Gini and HHI Values of IFQ Landings in the IFQ Halibut Fishery

Area	Metric	1995	2003	2015	2023
2C	Gini	0.46	0.55	0.53	0.54
	HHI	22.46	36.36	62.79	64.49
3A	Gini	0.56	0.56	0.52	0.51
	HHI	25.67	34.67	48.02	53.90
3B	Gini	0.50	0.49	0.44	0.48
	HHI	66.62	57.80	97.24	148.07
4A	Gini	0.47	0.41	0.32	0.35
	HHI	128.03	160.36	216.95	347.51
4B	Gini	0.52	0.41	0.41	0.13
	HHI	290.04	377.08	526.58	1,072.53
4C	Gini	0.50	0.55	0.45	0.67
	HHI	394.93	500.60	951.95	3,862.63
4D	Gini	0.49	0.43	0.40	0.46
	HHI	726.91	493.04	574.28	853.04
4E	Gini	0.50	0.54	NA	NA
	HHI	281.88	152.91	NA	NA

Source: Developed by Northern Economics based on data from NMFS (2024d)

Similar to the QS caps, vessel caps are intended to limit the consolidation of harvested IFQ on fewer vessels, potentially limiting the number of vessels needed to prosecute the fishery and impact available crew jobs and new entrant opportunities. However, as shown above and as discussed in the previous review, consolidation has occurred among vessels harvesting IFQ halibut since the program's implementation. At the program's outset, few vessels were harvesting near the fishery's vessel cap, with no vessels harvesting within 10% of the 2C cap in 1995 (Table 21). As of 2023, the number of vessels harvesting near the vessel cap across all areas has remained relatively stable since 2015. As noted in the 2016 review, there was an increasing trend in the number of IFQ halibut vessels fishing within 10% of the cap between 1995 and 2015, likely due to decreasing fleet sizes and TAC, along with the corresponding decrease in vessel caps. Fleet sizes have continued to decrease since 2015, meaning that while there have not been major recent changes to the number of vessels fishing near the cap, the percentage of the vessels fishing near the cap has increased, with 6.8% of the fleet harvesting within 10% of the IFQ all-areas vessel use cap in 2023, compared to 5.5% in 2015. As of 2023, only a small number of vessels harvesting in area 2C are limited by the vessel cap.

The number of vessels fishing above the all-area cap has increased from 15 in 2015 to 21 in 2023 (Table 21). However, it is worth noting that any person receiving an approved IFQ allocation in excess of a vessel cap may still catch and retain all of that IFQ onboard a single vessel. This may account for some of the overages shown, with 7 QS holders allocated IFQ greater than the all-area vessel use caps in 2015 and 7 in 2023 (Table 22). Additionally, as described in Section 1.1.3, temporary waivers of the vessel use caps in area 4 were put in place in 2020, 2021, and 2022, followed by a final ruling in 2023 removing vessel caps in area 4 through the 2027. Larger harvests in these areas by the top percentage of vessels may also account for some of the all-area overages seen in 2023.

Table 21. IFQ Halibut Vessel Caps

Area	Number of Vessels	1995	2015	2023
2C 1%	Number of Vessels	1077	460	347
	Over the Cap	0	2	3
	Within 10%	0	8	12
All IFQ TAC 0.50%	Number of Vessels	2136	874	687
	Over the Cap	1	15	21
	Within 10%	3	48	47

Note: This table only includes 1st-level QS holdings evaluated by a single identifier for each individual or entity. It does not include collective holdings due to subsidiaries, joint ventures, partnerships, or other similar business structures.

Source: Developed by Northern Economics based on data from AKFIN (2024)

Table 22. IFQ Halibut QS Holders Allocated IFQ Above Vessel Caps, 2015 and 2023

	2015		2023	
IFQ Area	Area Cap	Number of QS Holders Allocated IFQ Above Cap	Area Cap	Number of QS Holders Allocated IFQ Above Cap
2C	36,975	0	89,043	0
All Area Cap	85,872	7	34,227	7

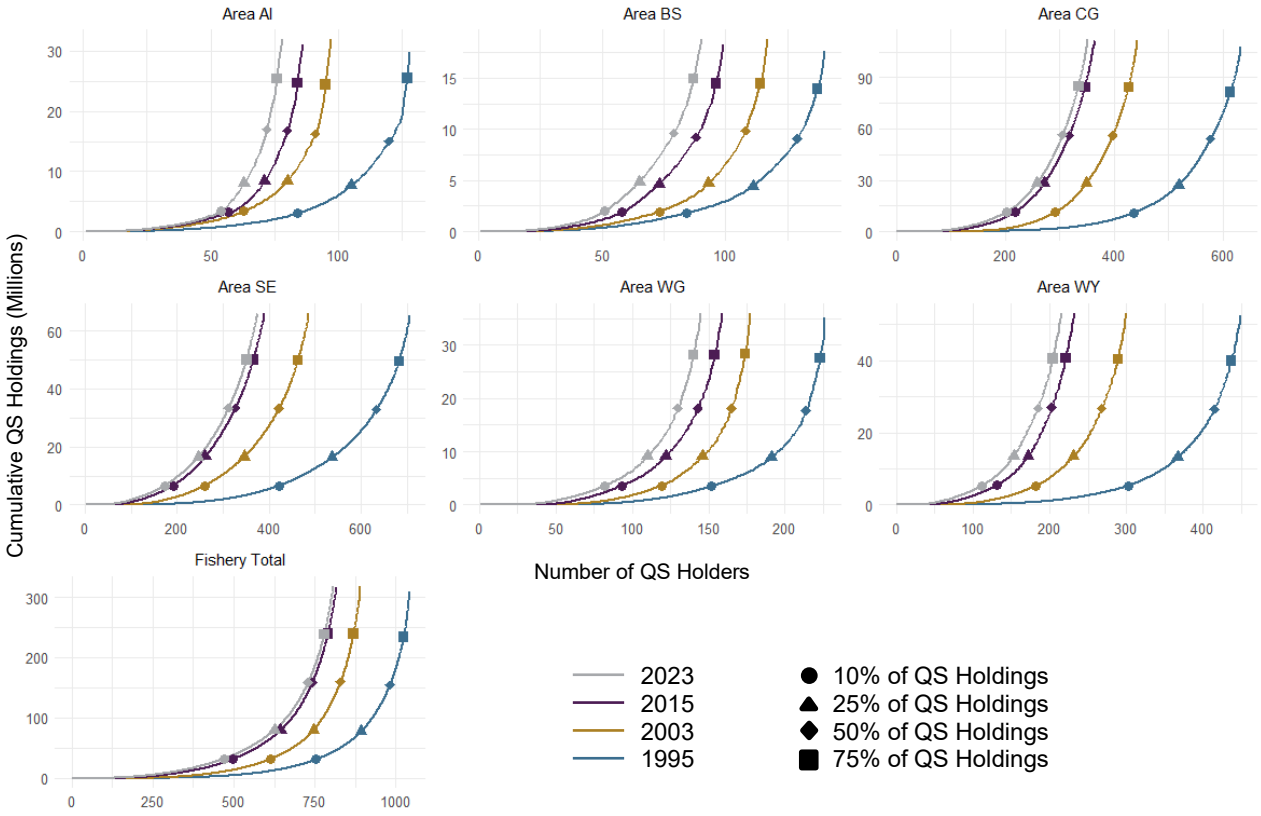
Source: Developed by Northern Economics based on data from AKFIN (2024)

2.4.6.2 Distribution of Sablefish QS

Allocations and QS Use Caps

Figure 47 shows the cumulative distribution of QS holdings by individuals and the number of QS holders in each management area in four years, 1995, 2003, 2015, 2023. In each area there has been a decline in the number of individuals holding QS, leading to leftward shifts in the curve over time. Similar to the halibut fishery, the majority of consolidation has occurred across individuals in the 25th percentile of QS holders, or those with the lowest amount of QS. This is reflected in a general increase in equality of shareholdings, as indicated by decreases in the Gini coefficient in most management areas (Table 23). The AI management area is the only area with increases in inequality between 1995 and 2023, represented by an increase in the Gini coefficient from 0.67 in 1995 to 0.73 in 2023. Inequality in QS holdings is lowest in the SE area, which has decreased from 0.65 in 1995 to 0.52 in 2023. Drivers of this reduction in inequality over time may be result of fewer individuals with QS holdings in excess of the QS cap, which has decreased from 7 to 3 between 1995 and 2023 , and only minor changes in the number of individuals within 10% of the cap (increasing from 11 to 12 in the same period, Table 24). This trend is similar in all other areas, where the number of individuals with holdings in excess of the cap has decreased over time, and overall, the number of individuals withing 10% of the cap has also decreased slightly, from 15 to 14 individuals. Similar to the halibut fishery, concentration of QS holdings, as represented by increases in the HHI, has shown some increases over time in most areas, but remains lower than government benchmarks for market concentration levels (Table 23). QS holdings in the AI and BS areas are the most concentrated in 2023 (512 and 314, respectively), and least concentrated in the SE and CG areas (59 and 77).

Figure 47. Consolidation of Sablefish QS by Area



Source: Developed by Northern Economics based on data from NMFS (2024d)

Table 23. Gini and HHI Values of Sablefish QS Allocations by Area

Area	Metric	1995	2003	2015	2023
AI	Gini	0.68	0.71	0.77	0.50
	HHI	755.77	1,062.95	2,064.88	2,328.13
BS	Gini	0.56	0.69	0.80	0.64
	HHI	390.46	905.58	2,157.56	1,662.67
CG	Gini	0.63	0.53	0.49	0.55
	HHI	77.98	103.16	122.64	207.90
SE	Gini	0.55	0.47	0.38	0.37
	HHI	57.18	70.88	84.27	98.23
WG	Gini	0.63	0.53	0.50	0.47
	HHI	348.45	279.31	337.70	439.22
WY	Gini	0.61	0.52	0.47	0.45
	HHI	114.56	150.12	166.58	244.99

Source: Developed by Northern Economics based on data from NMFS (2024d)

Table 24. Sablefish QS Use Caps

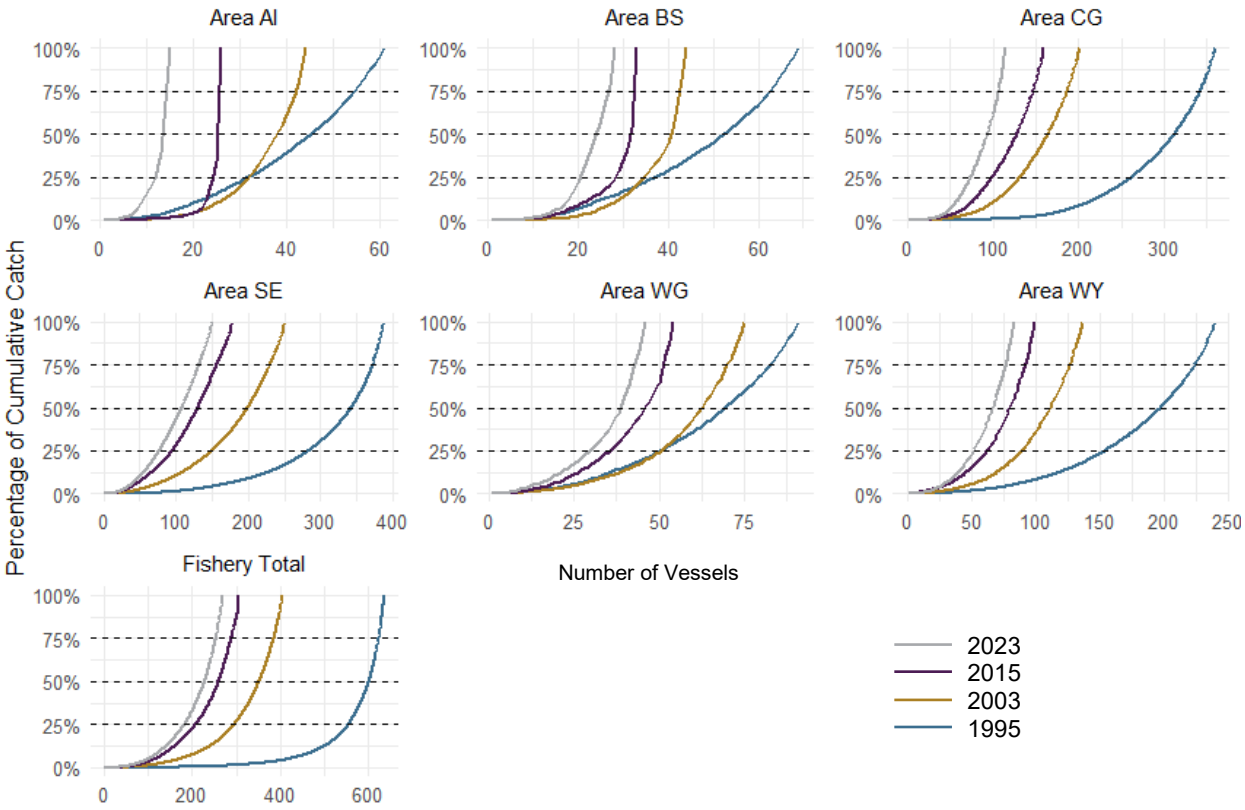
Area	Number of Individuals	Initial Issuee	2015	2023
Area SE	QS Holders	706	389	374
	Over the Cap	7	6	5
	Within 10%	12	12	12
All Areas	QS Holders	1041	817	807
	Over the Cap	8	4	2
	Within 10%	10	6	3

Source: Developed by Northern Economics based on data from NMFS (2024d)

Harvest and Vessel Caps

Similar to the trends in the consolidation of QS holdings, harvest has also been consolidated to fewer vessels across management areas over time, with far fewer vessels having smaller quantities of landings (number of vessels in the 25th percentile of harvest, Figure 48). In some areas, the total vessels making landings has also decreased significantly. Changes in the Gini coefficient indicate that in the SE, CG, WG and WY areas, inequality has decreased over time (to 0.34, 0.57, 0.57 and 0.50 in 2023, Table 25). Inequality has decreased the most in the SE area from 0.55 in 1995 to 0.34 in 2023, driven by the exit of vessels with small landings amounts. In 1995, 283 of the 388, or 73% of vessels in that area accounted for 25% of the total catch. In 2023, this was closer to 50%. However, in other areas landings have become more unequal, particularly in the AI and BS areas (at a Gini value of 0.72 and 0.65 in 2023). In the AI area, between 2015 and 2023 the number of vessels harvesting sablefish decreased from around 26 vessels to 15 vessels. The HHI indicates that in this area, landings are moderately concentrated (an HHI over 1,500 but less than 2,500) in both 2015 and 2023 (Table 25). All areas continue to be below concentration benchmarks as of 2023.

Figure 48. Consolidation of Harvest in the Sablefish IFQ Fishery by Area



Source: Developed by Northern Economics based on data from AKFIN (2024)

Table 25. Gini and HHI Values of IFQ Landings in the IFQ Sablefish Fishery

Area	Metric	1995	2003	2015	2023
AI	Gini	0.68	0.64	0.79	0.72
	HHI	755.77	579.30	1,881.25	1,852.06
BS	Gini	0.56	0.72	0.79	0.65
	HHI	390.46	953.31	2,298.07	659.17
CG	Gini	0.63	0.56	0.51	0.57
	HHI	77.98	102.02	113.24	179.71
SE	Gini	0.55	0.46	0.35	0.34
	HHI	57.18	68.44	78.83	88.94
WG	Gini	0.63	0.58	0.54	0.57
	HHI	348.45	324.11	399.77	441.83
WY	Gini	0.61	0.53	0.48	0.50
	HHI	114.56	150.08	177.88	219.80

Source: Developed by Northern Economics based on data from AKFIN (2024)

As noted in the previous review, the number of vessels fishing within 10% of the all-area and SE vessel cap increased between 1995 and 2015, both by number of vessels and as a percentage of the IFQ sablefish fleet. This also coincided with a decrease in the number of vessels prosecuting IFQ sablefish and decreases in TAC, which in turn lowered IFQ vessel caps. However, as discussed in Section 2.2, IFQ sablefish TAC has seen a dramatic increase since the 2015. Notably, utilization rates have not matched this increase, and as of 2023, reached a program low of 60%. This is reflected in the decrease in the number of vessels fishing within 10% of the allowable vessel caps, which decreased for both all-areas and in the SE area (Table 26). Even with the continued decrease in fleet sizes, the percentage of vessels fishing within 10% of the cap has also decreased from 6.6% in 2015 to 3.7% in 2023 for all areas, and from 2.2% in 2015 to 1.7% in 2023 in the SE area. Given the low utilization rate of TAC and the low number of vessels fishing near the vessel caps, these caps are likely not limiting factors for vessels, even with continued fleet consolidation. The number of vessels fishing over the vessel caps has remained relatively stable since 2015 in both the SE area and across all areas. Notably, as with halibut, any person receiving an approved allocation of sablefish IFQ above the IFQ vessel limit may still retain all of that IFQ on a single vessel. In 2023, there were 14 such individuals across all areas and 5 in the SE area, and in 2015, there were 5 across all areas and 7 in the SE area (Table 27).

Table 26. IFQ Sablefish Vessel Caps

Area	Number of Vessels	1995	2015	2023
SE 1%	Number of Vessels	388	178	151
	Over the Cap	7	4	5
	Within 10%	12	39	25
All IFQ TAC 1%	Number of Vessels	635	305	269
	Over the Cap	8	2	1
	Within 10%	10	20	10

Source: Developed by Northern Economics based on data from AKFIN (2024)

Table 27. IFQ Sablefish QS Holders Allocated IFQ Above Vessel Caps, 2015 and 2023

	2015		2023	
IFQ Area	Area Cap	Number of QS Holders Allocated IFQ Above Cap	Area Cap	Number of QS Holders Allocated IFQ Above Cap
SE	59,170	7	123,575	5
All Area Cap	235,873	5	620,740	14

Source: Developed by Northern Economics based on data from AKFIN (2024)

2.5 Crewmember Impacts

This section addresses the following objective of the final EIS for the IFQ Program:

- Objective 5: Maintain the existing business relationships among vessel owners, crews, and processors

At the time of IFQ Program implementation, the Council wanted to maintain the preexisting business relationships and chose to allocate based on historical participation and investment in the halibut and sablefish fisheries. Nevertheless, the Council understood that creating exclusive harvesting privileges for vessel owners could fundamentally shift the power structures in the fisheries. This section discusses how the IFQ Program affected crewmembers in the IFQ fisheries, while impacts to harvesters and processors are discussed in Section 2..

At the time that the IFQ Program was implemented, the Council elected to only allocate QS to persons who owned or leased a vessel with fixed gear landings of sablefish or halibut off Alaska in order to maintain business relationships within the harvesting sector. QS was not allocated to crew, in part, because no data on crew participation were available at the time. The investment of crewmembers in the fisheries was instead recognized through the mandate that catcher vessel QS transfer be limited to bona fide IFQ crewmembers (i.e., those with 150 days of commercial fish harvesting experience in a US fishery and who have been issued a Transfer Eligibility Certificate (TEC)), and those who were initial QS recipients.

In this section, data on outcomes to crew under the IFQ Program are described. Because data on crew are extremely limited, the analysis relies on updating available indicators on the approximate number of crew days and crew positions across the fisheries and reference previous survey and workshop findings, which were reviewed in depth during the previous review.

2.5.1 Number of Crew Jobs and Crew Days

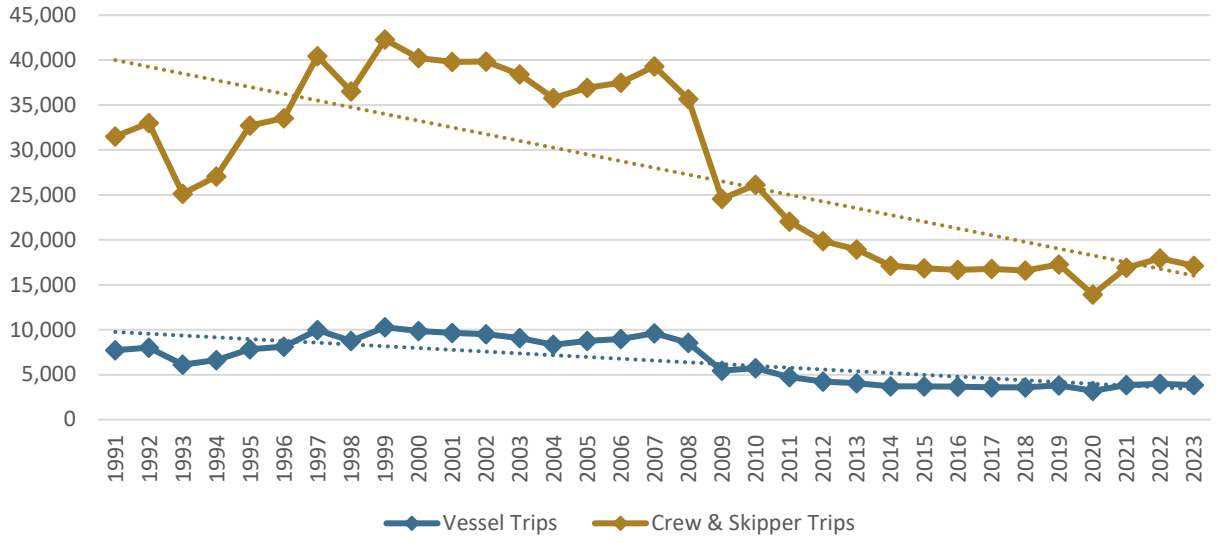
Data for numbers of vessel trips for sablefish and halibut have been collected via fish-tickets continuously over many decades. Beginning in 2006, data collected via fish-tickets have steadily improved. By 2009, all fish-tickets reported both the date of the landing and the start date of the trip. In addition, all fish-tickets from 2009 forward report the number of crewmembers on board a vessel. Historical estimates of numbers of crewmembers and skippers from 1991–2008, that are shown in the figures below were generated by applying vessel-level crew estimates from 2009–2023 to the data for the earlier years by gear type.[4]

While the IFQ Program has led to consolidation in terms of the number of vessels that are active in the IFQ fisheries (Section 2.4.6.1 and Section 2.4.6.2), the direct impacts on crewmembers are not uniformly downward. As shown in Figure 49 and Figure 50 the number of vessel trips and

[4] Gears reported include longline and pot gear as well as troll and jig gear.

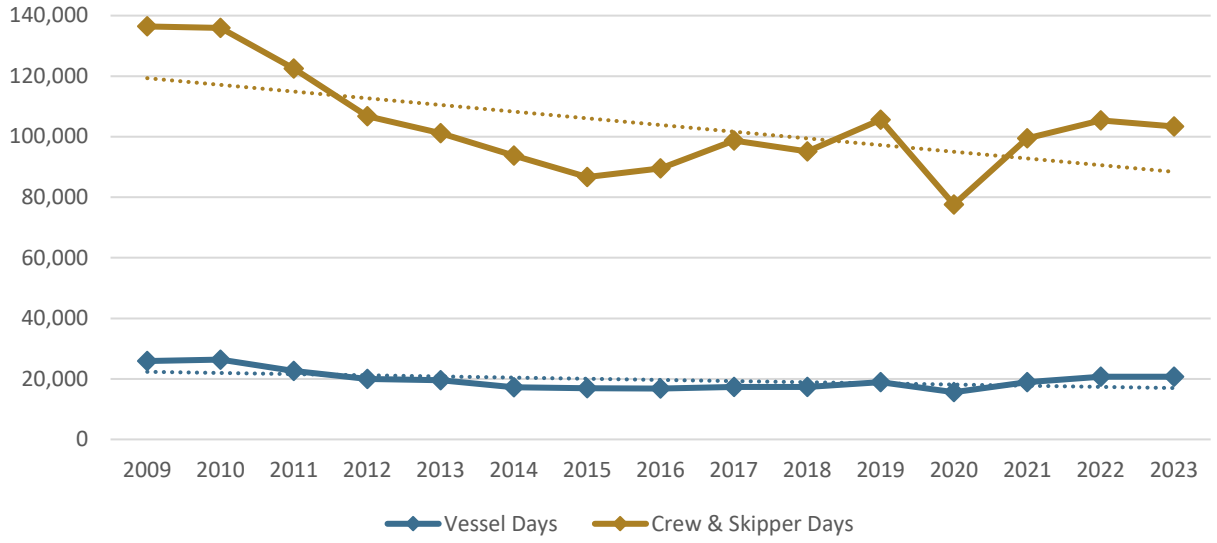
crew/skipper trips in the halibut IFQ fishery generally increased during the first 13 years after IFQ Program implementation (from 1995–2007), before declining in 2023. The increases with respect to halibut during the earlier years of the program reflect higher overall levels of halibut TAC—from 1995–2002 TACs increase from just over 30 million pounds to nearly 59 million pounds in 2002. Since then, halibut TACs have declined to 20–24 million from 2014–2023.

Figure 49. Number of Halibut Vessel Trips and Crew/Skipper Trips



Source: Developed by Northern Economics based on data from AKFIN (2024).

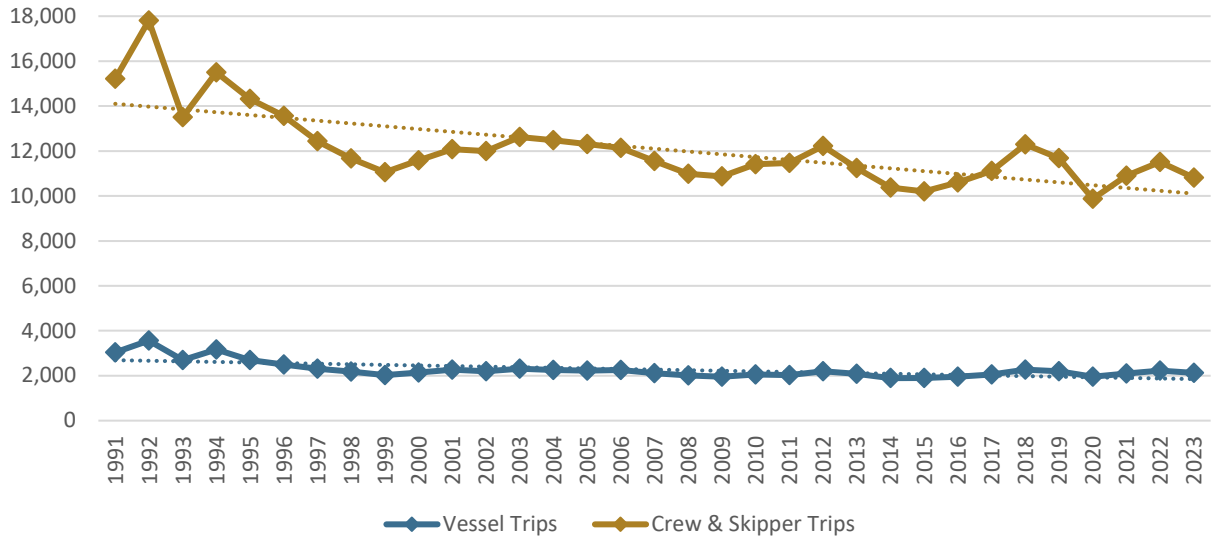
Figure 50. Number of Halibut Vessel Days and Crew/Skipper Days



Source: Developed by Northern Economics based on data from AKFIN (2024).

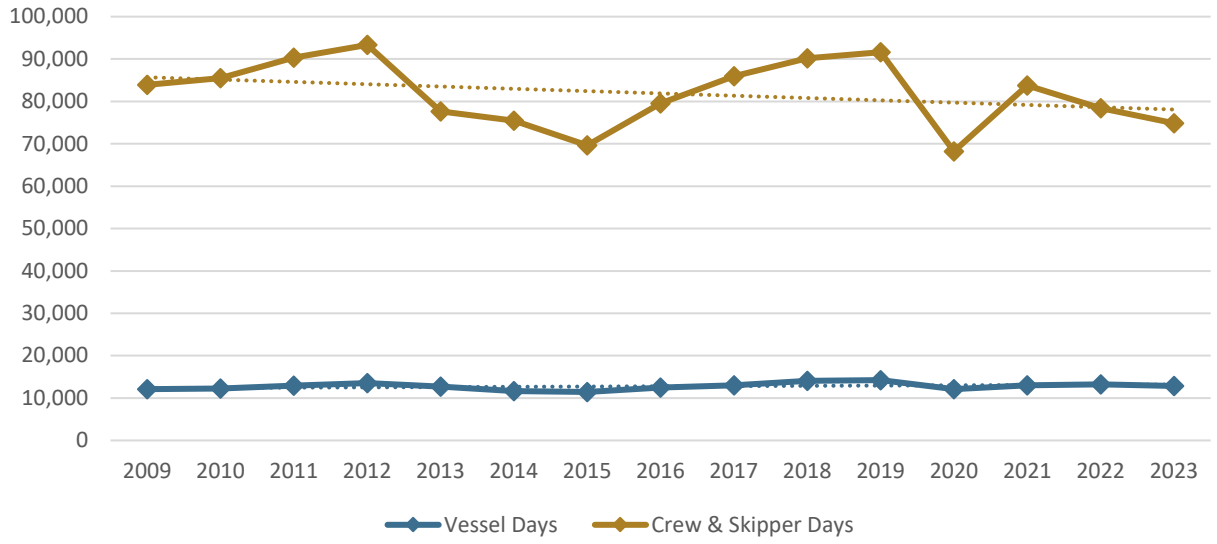
As shown in Figure 51 and Figure 52, the number of vessel trips and crew/skipper trips in the sablefish IFQ fishery have generally followed a slightly downward trend since 1991, although trips increased slightly after 2015.

Figure 51. Number of Sablefish Vessel Trips and Crew/Skipper Trips



Source: Developed by Northern Economics based on data from AKFIN (2024).

Figure 52. Number of Sablefish Vessel Days and Crew/Skipper Days



Source: Developed by Northern Economics based on data from AKFIN (2024).

2.5.2 Crew Shares and Average Crew Earnings

The previous review concluded that changes in bargaining power due to fewer crew positions combined with changes to how vessel owners participate in the fisheries likely caused crew shares as a proportion of revenue to decrease since implementation. Despite this, the review concluded that crew earnings overall have likely increased and became more predictable overall due to longer fishing seasons and certainty of earnings based on QS holdings. However, it was noted in the previous review that the overall TAC and the use of hired masters or lessees, and number of crew on a given vessel could influence crew earnings across vessels, management areas, and years. Table 28 shows the distribution of crew, captain, and vessel shares reported in a survey of 375 QS holders in 2009. According to those who responded, the majority paid their crew a total of 10% of 29% of gross revenue, likely reflecting differences in share systems, including how operating costs and any lease fees are factored in, differences in wages across regions, as well as the number of crew on a vessel. According to the crew workshop held in 2016, crew shares are likely lower when QS is leased or in the presence of a hired master (ranging from 3% to 8%, versus 6% to 15%,) (NPFMC and NMFS 2016). Crew earnings have been estimated to increase following IFQ implementation, from $1,095 to $2,512 in the halibut fishery and from $3,615 to $8,342 in the sablefish fishery (Hartley and Fina 2001, as cited in NPFMC and NMFS 2016).

Table 28. Crew, Captain, and Vessel Shares as a Percentage of 2009 Gross revenues in the IFQ Fisheries

	Halibut			Sablefish		
	Crew Share	Captain Share	Vessel Share	Crew Share	Captain Share	Vessel Share
0-9%	11%	24%	10%	11%	22%	10%
10-19%	30%	29%	14%	30%	28%	14%
20-29%	30%	17%	21%	30%	9%	21%
30-39%	13%	14%	25%	13%	6%	25%
40-49%	10%	7%	19%	10%	5%	19%
50%+	6%	9%	12%	6%	5%	12%
Total response	**375**	**278**	**290**	**375**	**218**	**290**

Source: Kotlarov (2015) as cited in NPFMC and NMFS (2016)

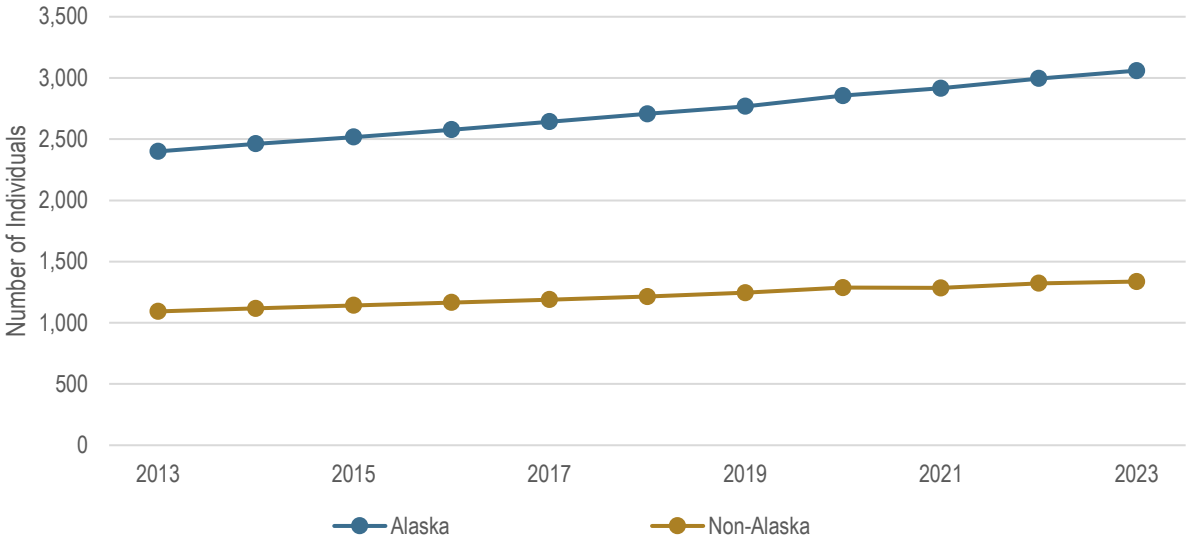
2.5.3 Number of IFQ Crewmembers and QS Holdings

The number of registered IFQ crewmembers (i.e., bona fide IFQ crewmembers) and their QS holdings have changed over time due to the requirement that QS can only be acquired by registered IFQ crewmembers.[5] The total number of individuals who have become registered IFQ crewmembers in

[5] Note that the IFQ crewmembers described in Section 2.5.3 are defined differently than IFQ crewmembers reported in Section 2.5.1. Section 2.5.3 refers to individuals who are "bona fide IFQ crewmembers", i.e., crewmembers who are officially eligible to purchase QS and IFQs from initial recipients. IFQ Program regulations require that all bona fide

either fishery are shown in Figure 53. Since 2013, the number of both Alaska and non-Alaska resident IFQ crewmembers have increased. The number of Alaska resident IFQ crewmembers have increased from 2,400 in 2013 to 3,060 in 2023, or 27.5%, compared to a 22.3% increase in non-Alaska resident IFQ crewmembers, from 1,093 to 1,337.

Figure 53. Total Number of Individuals Who Became IFQ Crewmembers at Any Time



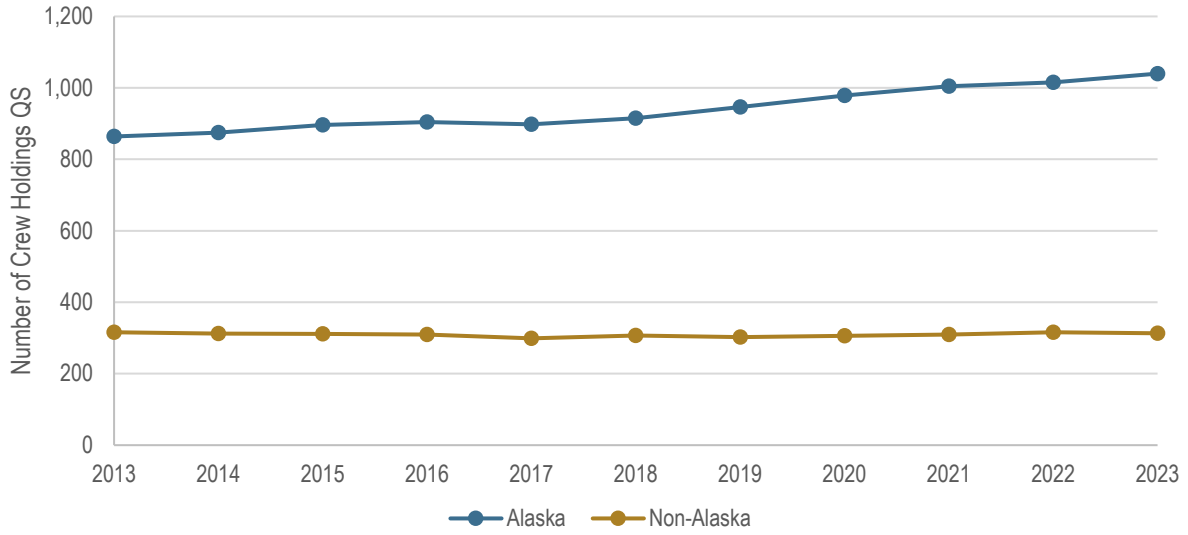
Note: Data represent the number of individuals who became IFQ crewmembers at any time during the IFQ Program and the number of such persons who currently hold QS by state of residence as reported on their TEC. Data are presented from 2013 on, the earliest year these data are available on NMFS' website.

Source: NMFS (2023a)

However, not all IFQ crewmembers hold QS. The number of Alaska and non-Alaska resident crewmembers holding QS are both lower than the number of crewmembers (Figure 54). However, since 2013, the number of Alaska resident crewmembers holding QS have increased from 864 in 2013 to 1,040 in 2023, a 20.4% increase. By contrast, the number of non-Alaska resident crewmembers holding QS has decreased slightly overall, from 316 in 2013 to 313 in 2023, with minor fluctuations between years.

IFQ crewmembers be onboard any vessel that is harvesting their IFQs. There are also many crewmembers that are actively working onboard vessels harvesting sablefish and halibut IFQs (included in Figure 49–Figure 52) who are not officially documented as bona fide IFQ crewmembers.

Figure 54. Number of IFQ Crewmembers Holding QS



Note: Data represent the number of individuals who became IFQ crewmembers at any time during the IFQ Program and the number of such persons who currently hold QS by state of residence as reported on their TEC. Data are presented from 2013 on, the earliest year these data are available on NMFS' website.

Source: NMFS (2023a)

A breakdown of the number of unique IFQ crewmembers and QS holdings as of 2023 by crewmember residence (Alaska or non-Alaska), fishery, and management area are provided in Table 29 for sablefish and Table 30 for halibut.

For sablefish, across areas, IFQ crewmembers who are Alaska residents held the greatest number of QS units in the SE area (at 24.5 million units) as of 2023, followed by the CG area (at 20.5 million units). Across all areas, Alaska IFQ crewmembers hold least 50% of all QS held by IFQ crewmembers, up to 73.8% in the SE area. Alaska IFQ crewmembers also hold the highest proportion of all QS in the SE area at 37.5% of all QS, followed by the BS area at 26.7%. Across all areas, IFQ crewmembers however, largely do not hold the majority of QS, with the exception of the SE area (at 51%). Across all areas the proportion held by all IFQ crewmembers was 38%.

Table 29. Count Of All Individuals Who Have Become Sablefish IFQ Crewmembers as of 2023 and Current QS Holdings

	Alaskans		Non-Alaskans		Proportion		
Area	Persons	QS Units	Persons	QS Units	IFQ crewmember QS held by AK crew	All QS held by AK crew	All QS held by crew
BS	25	4,999,761	15	3,569,135	58.3%	26.7%	45.7%
CG	116	20,486,219	161	18,480,799	52.6%	18.3%	34.9%
SE	149	24,764,517	134	8,970,472	73.4%	37.5%	51.0%
WG	37	6,547,654	66	6,492,624	50.2%	18.2%	36.2%
WY	54	9,150,081	94	6,628,229	58.0%	17.2%	29.6%
AI	18	6,746,842	26	4,031,171	62.6%	21.1%	33.8%
Total		**72,695,074**		**48,172,430**	**60.1%**	**22.9%**	**38.0%**

Note: Includes the number of individuals who became IFQ crewmembers during the current year and by IFQ Management Area, sablefish QS units those persons currently hold (regardless of when the QS was acquired) by state of residence as reported on their TEC.

Source: NMFS (2023a)

Across halibut management areas, Alaska IFQ crewmembers hold the highest number of shares in area 3A at 57.3 million QS units and area 2C at 27.3 million QS units (Table 30). In these areas, they hold 31.1% and 45.9% of all QS, respectively. Another area where Alaska IFQ crewmembers hold a relatively high proportion of QS is area 4A, at 45.1% of shares. Overall, Alaska IFQ crewmembers hold 33.4% of all QS, while all IFQ crewmembers hold 47.9%.

Table 30. Count Of All Individuals Who Have Become Halibut IFQ Crewmembers as of 2023 and Current QS Holdings

Area	Alaskans		Non-Alaskans		Proportion		
	Persons	QS Units	Persons	QS Units	IFQ Crewmember QS held by AK crew	All QS held by AK crew	All QS held by crew
2C	397	27,324,017	80	4,806,080	85.0%	45.9%	54.0%
3A	455	57,252,897	136	25,232,512	69.4%	31.1%	44.7%
3B	158	15,446,497	55	11,649,299	57.0%	28.5%	50.0%
4A	78	6,578,087	25	1,715,558	79.3%	45.1%	56.9%
4B	20	1,565,708	20	1,904,054	45.1%	16.9%	37.4%
4C	17	1,134,668	12	1,072,192	51.4%	28.3%	54.9%
4D	11	1,165,516	15	1,559,509	42.8%	23.5%	55.0%
4E	1	84	1	698	10.7%	0.1%	0.6%
Total		**110,467,474**		**47,939,902**	**69.7%**	**33.4%**	**47.9%**

Note: Includes the number of individuals who became IFQ crewmembers during the current year and by IFQ Management Area, sablefish QS units those persons currently hold (regardless of when the QS was acquired) by state of residence as reported on their TEC.

Source: NMFS (2023a)

2.6 Processor and Harvester Participation

This section addresses the following objectives of the final EIS for the IFQ Program:

- Objective 5: Maintain the existing business relationships among vessel owners, crews, and processors
- Objective 7: Limit the concentration of quota share ownership and IFQ usage that will occur over time.

2.6.1 Processor Participation

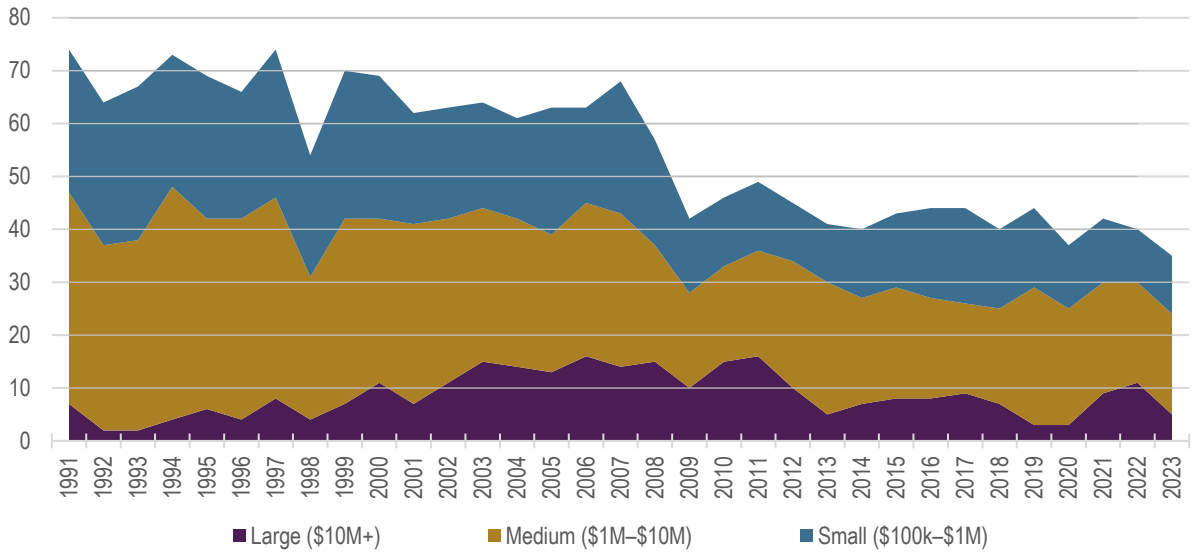
This section summarizes the activities of processors in the sablefish and halibut IFQ fisheries. Since 1991, an average of 91.6% of ex-vessel value generated has been landed at small, medium, and large shore-based buyers and processors in Alaska.[6]

As shown in Figure 55, the numbers of small, medium and large onshore buyers/processors have declined by 53% between 1971–2023. The number of small onshore buyers in Alaska declined from 35 1991 to as low as 10 in 2022, while medium sized buyers dropped from 41 in 1991 to 19 in 2022 and 2023. A major shift in the number occurred between 2007–2009 with a drop in the total number of large, medium and small processors from 68 to 42 active processors. Based on data from ADFG,[7] the decline in the numbers of onshore processors is widespread throughout Alaska fisheries and is not believed to be caused by anything directly related to the sablefish and halibut fisheries of the IFQ Program.

[6] The current review classified buyers and processors as "*Very Small*" if they had inflation adjusted purchases less than $100,000 in a given year. There were an average of 24 very small processors in the two fisheries but overall they accounted for less than 0.3 percent of revenue and therefore were not included in the figures. "*Small"* buyers had ex-vessel purchases from $100,000 to $1 million (in 2023$); Buyers/processor were considered "*Medium*" if their reported ex-vessel value was between $1 and $10 million during a given year. Finally, "*Large*" buyers/processors had annual inflation adjusted ex-vessel value exceeding $10 million.

[7] Based on intent to operate data from ADFG at *https://www.adfg.alaska.gov/index.cfm?adfg= fishlicense.historical_holders*.

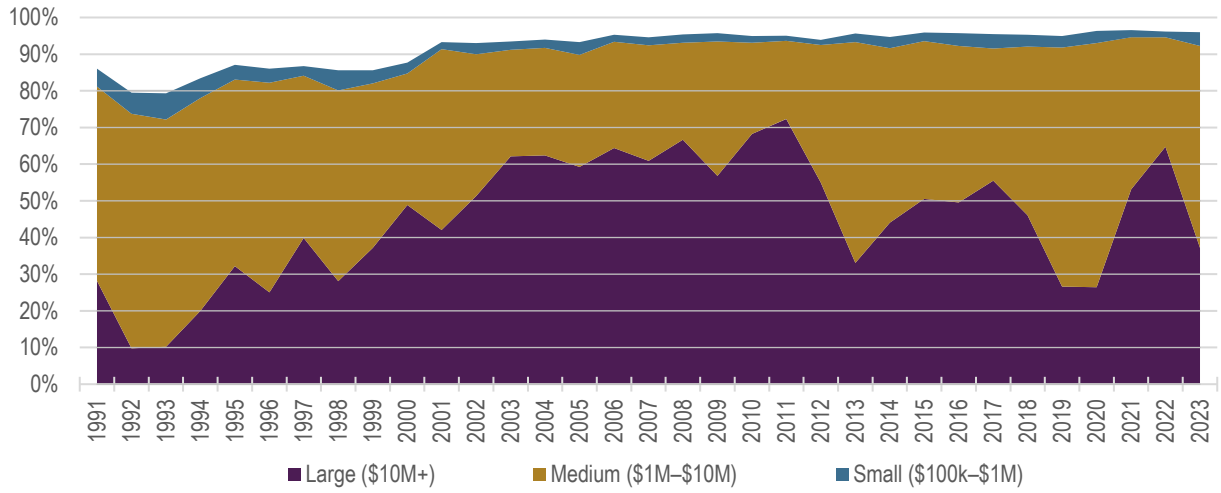
Figure 55. Number of Alaska Buyers and Processors in the Halibut and Sablefish IFQ Fisheries



Developed by Northern Economics using data from AKFIN (2024)

Figure 56 summarizes the percent of total sablefish and halibut ex-vessel value reported by the three groups of onshore buyers/processors. Over the period shown, large buyers/processors accounted for 45% of the total, while medium classed buyer/processors accounted for 43.6% on average, and small processors accounted for 3.2% of value. The remaining 8% of value was shared by very small processors (with less than $100,000 in ex-vessel value), unidentified processors, catcher processors, inshore floating processors, and processors operating in Canada, Washington or Oregon.

Figure 56. Percent of Total Halibut and Sablefish Ex-Vessel Value by Buyer/Processor Size Class

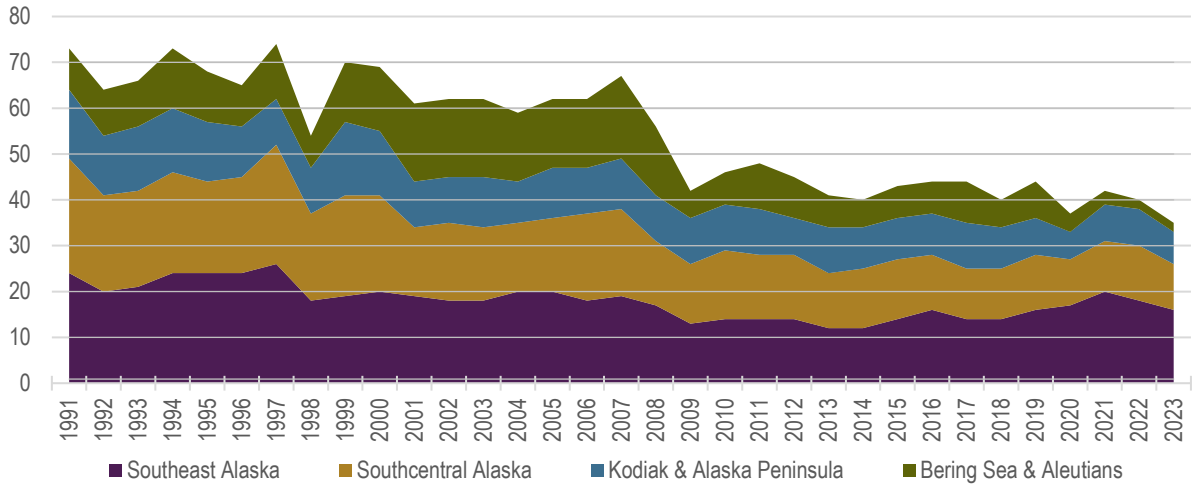


Source: Developed by Northern Economics using data from AKFIN (2024)

Figure 57 summarizes the number of this same set of onshore buyers/processors by region in Alaska. The Southeast Alaska Region extends from US/Canada Border north through processors located in Yakutat, with a high of 26 (in 1997) and low 12 in 2013 and 2014. In 2021, the number was up to 20 before dropping back down. The Southcentral Alaska Region includes buyers/processors located in Prince William Sound through Cook Inlet and the Kenai Borough—the high count was 26 and the low was 10. The Kodiak and Alaska Peninsula Region (including False Pass) had a maximum of 16 buyers/processors and low of 6. The Bering Sea and Aleutians Region had a high of 18 buyers/processors of halibut and sablefish in 2007 and a low of 2 in 2022. There were major reductions in all onshore regions in the three-year period 2007 to 2009 from 68 to 42. In the same period, buyers and processors in both Southeast and Southcentral Alaska fell from 19 to 13. The number of processors in Kodiak and Alaska Peninsula dropped by only one, but in the Bering Sea and Aleutians the number fell from 18 to 6 from 2007–2009.

As indicated previously, this major reduction in the number of processors from 2007–2009 is occurring in all Alaska fisheries does not appear to be directly linked to the IFQ Program.

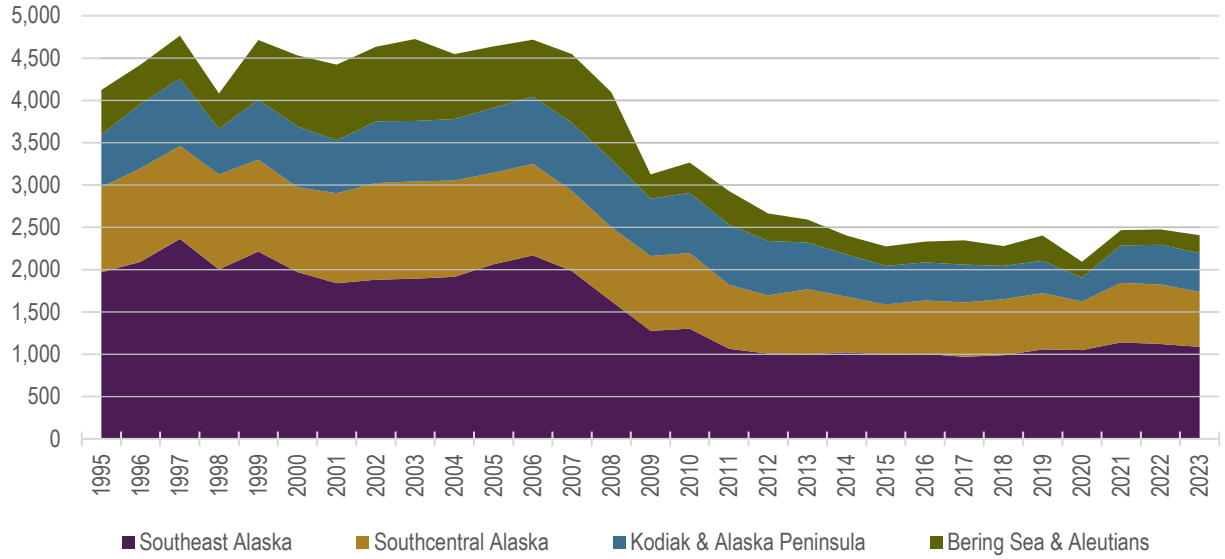
Figure 57. Number of Small, Medium, and Large Onshore Buyers/Processors by Alaska Region



Developed by Northern Economics using data from AKFIN (2024)

A measure of capacity of onshore buyers/processors is the number days that a given processor is buying at particular port. Fish-ticket data from 1995–2022 was used to estimate these totals. Figure 58 shows the cumulative number of buying days by onshore processors in Alaska. The peak level of buying days occurred in 2003 at 4,727. In 2006 there were 4,716 buying days over all processors. But by 2009, the number had dropped to 3,124—a decline of over 33%. From 2015–2022 the number of buying days have leveled out to an average of 2,342 over all of the areas.

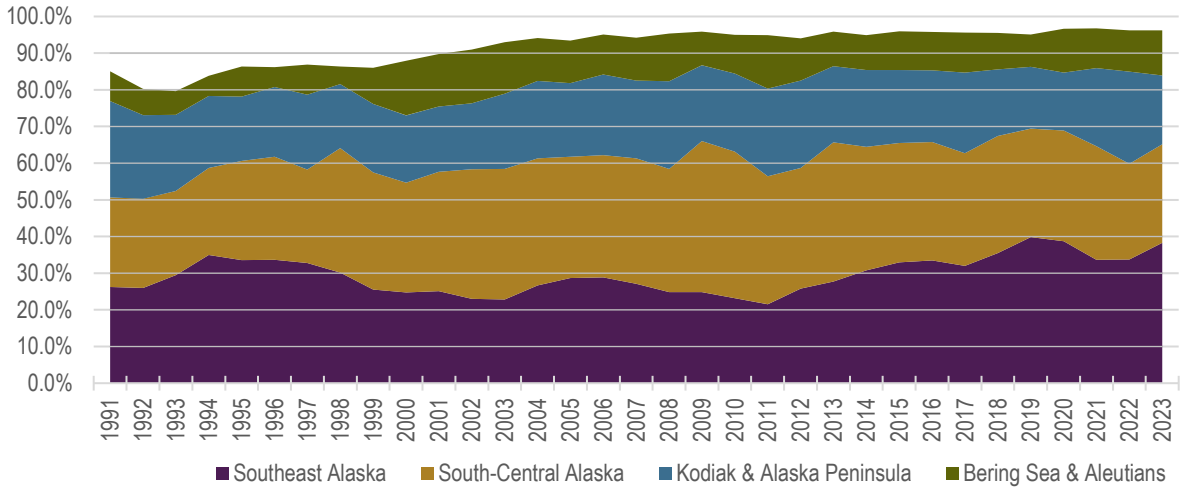
Figure 58. Total Port-Level Buying Days of Onshore Buyers/Processors by Alaska Region



Developed by Northern Economics using data from AKFIN (2024)

Figure 59 shows the cumulative percent of onshore ex-vessel value by processing region in Alaska. There has been a relative growth in the percentage generated in Southeast and Southcentral Alaska while percentages in the more westerly area have remained relatively stable. Not included in these data are buyers and processors that are registered as catcher processors, catcher sellers, EEZ operators, or processors without identified ports.

Figure 59. Cumulative Percent of Halibut and Sablefish Ex-Vessel Value by Onshore Region



Source: Developed by Northern Economics based on data from AKFIN (2024)

2.6.2 Harvester Participation

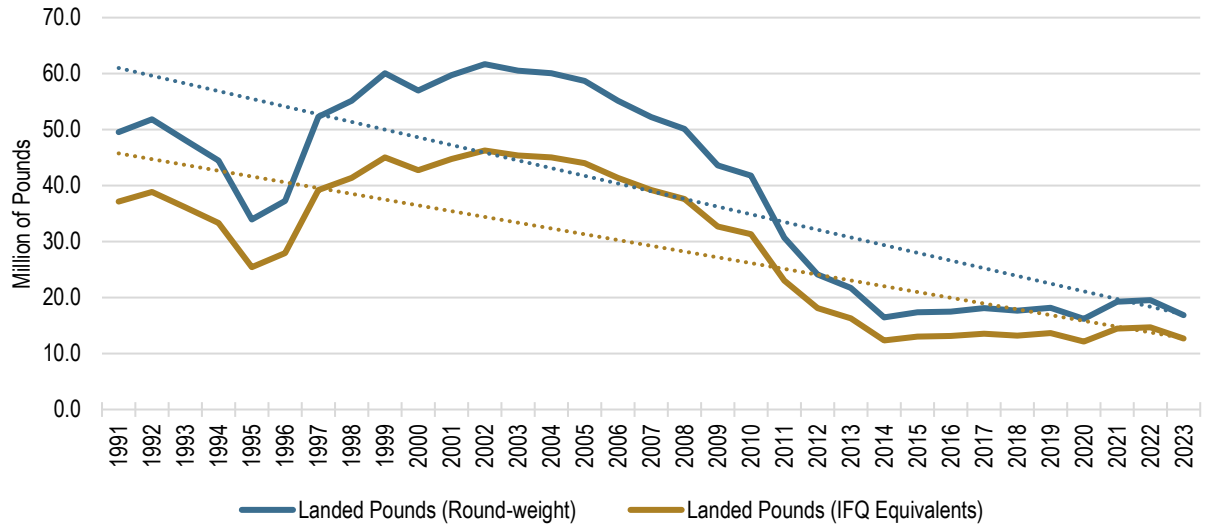
2.6.2.1 Halibut IFQ Fishery

Landings and Ex-vessel Revenue

Figure 60 shows that the amount of halibut landed in terms of pounds round-weight and IFQ equivalents for the baseline period and every year of the IFQ Program through 2022 showed an overall declining trend due to decreases in the annual halibut TAC, although the amounts were fairly stable between 2014 and 2022. This section summarizes participation by individual permit holders that landed halibut.

Figure 60 shows the total pounds landed in the halibut fishery in terms of round-weight landings and in terms of headed and gutted halibut. The IPHC sets annual catch limits in terms of headed and gutted fish and all IFQs are issued in terms of headed and gutted fish.[8] As shown in the figure, landed pounds decline sharply from 1992–1995, then increased quickly from 1996–1999. Landed pounds were fairly stable through 2005, but have declined significantly through 2014. Since 2014 fishery-wide landed pounds have been fairly stable between 16.5 million to 20 million pounds (round-weight).

Figure 60. Landed Pounds in the Halibut IFQ Fishery

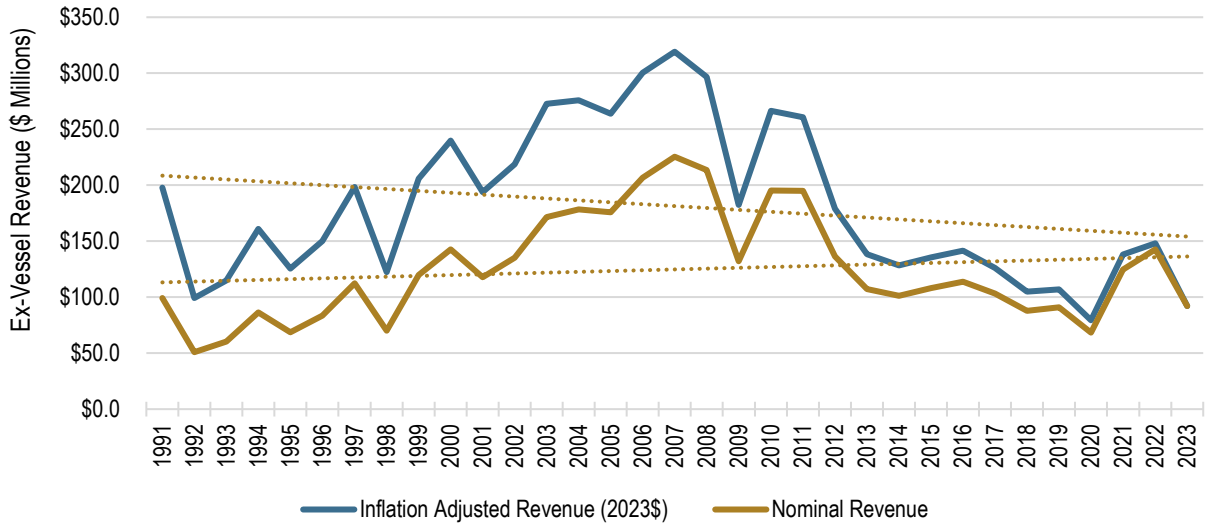


Source: Developed by Northern Economics based on data from AKFIN (2024)

[8] Data for this figure were developed in a two-step process by AKFIN and Northern Economics. First, all landed fish w were converted to round-weight equivalents by AKFIN based on details of landed conditions within each fish-ticket. Second, Northern Economics converted round-weight pounds uniformly back to IFQ Equivalent weights by multiplying round-weights by the standard product recovery rate of 75% for headed and gutted halibut.

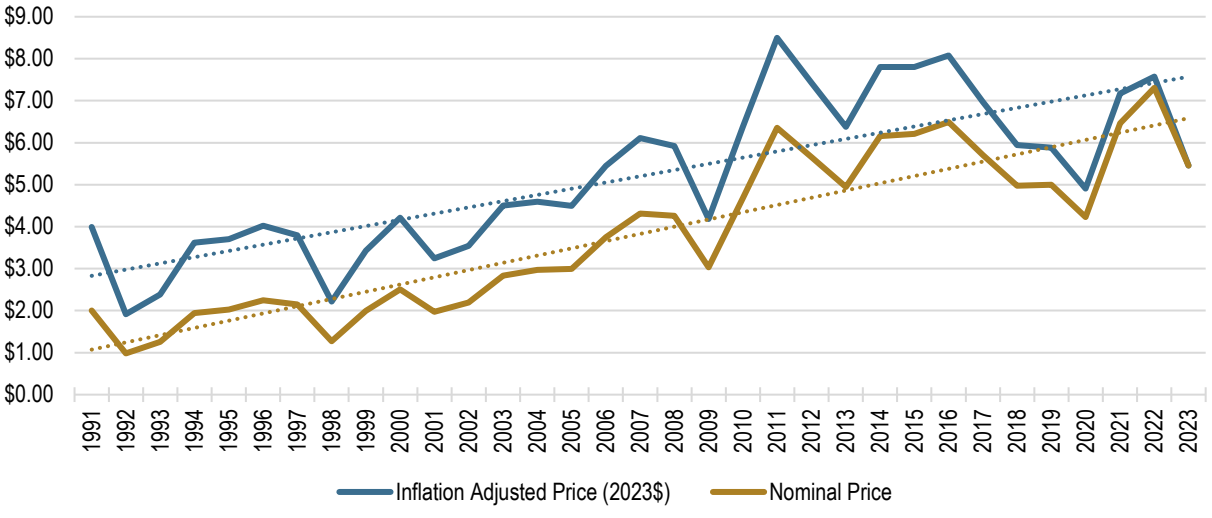
Despite the TAC decreases, Figure 61 shows that revenues in the halibut fishery remained relatively stable or even rose in some years in the mid-2000s, as the rising ex-vessel prices shown in Figure 62 largely offset TAC decreases. However, between 2016 and 2020, prices declined, leading to revenue decreases despite relatively stable landings. Since 2020, there have been increases in both landings and ex-vessel prices, leading to the highest ex-vessel revenue in 5 years at $148 million in 2022. However, total revenues fell back below $100 million in 2023 with fairly sharp price declines.

Figure 61. Ex-Vessel Revenue in the Halibut IFQ Fishery



Source: Developed by Northern Economics based on data from AKFIN (2024)

Figure 62. Ex-Vessel Prices ($ per Round-Weight Pound) in the Halibut IFQ Fishery

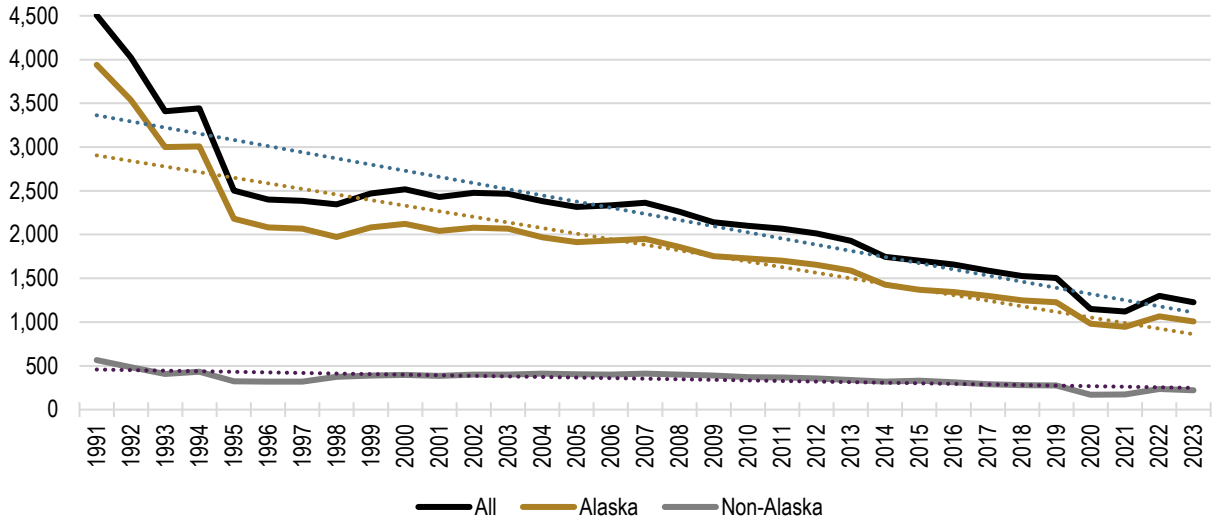


Source: Developed by Northern Economics based on data from AKFIN (2024)

Number of Active Permit Holders

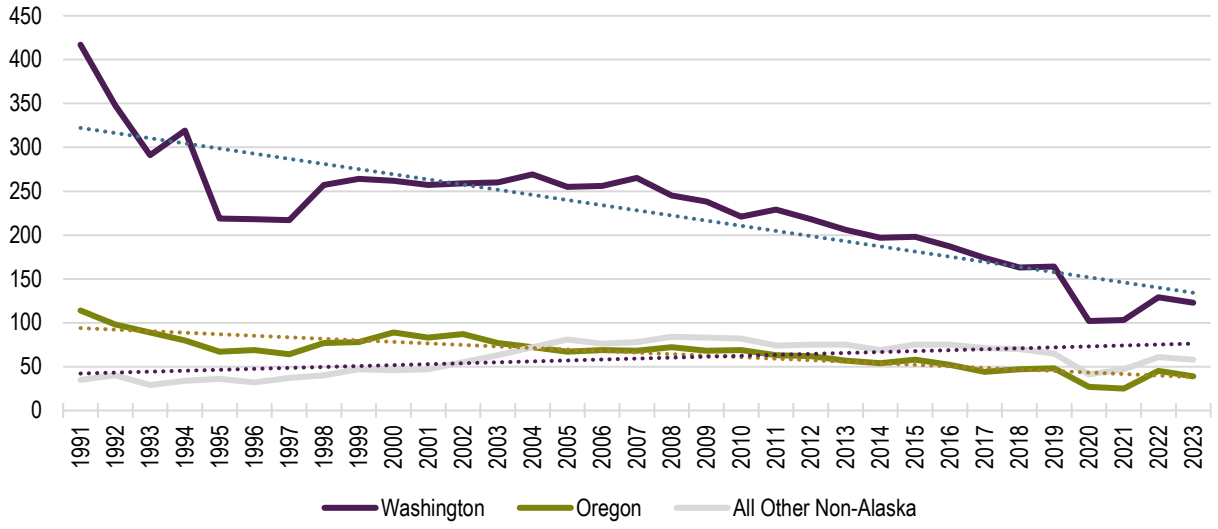
Figure 63 shows that in the years prior to the start of the IFQ Program in 1995, the number of persons active in the halibut fishery decreased sharply. Following program implementation, the number of active participants continued to decline but at a lower rate. The number of Alaska participants has been declining at a rate slightly lower than that of participants as a whole (roughly 64 participants per year versus 71 participants), while non-Alaska participants decreased at a much lower rate (approximately 6 participants per year). As shown in Figure 64, active participants residing in Washington declined at a faster rate than participants residing in Oregon.

Figure 63. Number of Active Permit Holders in the Halibut IFQ Fishery—Alaska and Non-Alaska Residents



Source: Developed by Northern Economics based on data from AKFIN (2024)

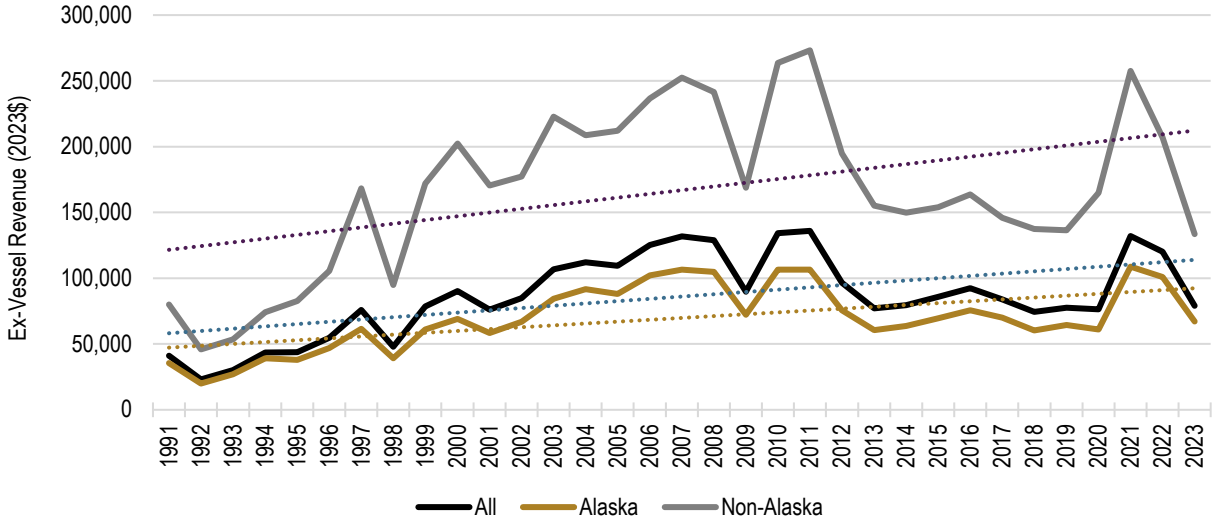
Figure 64. Number of Active Permit Holders in the Halibut IFQ Fishery—Washington, Oregon, and Other Non-Alaskan



Source: Developed by Northern Economics based on data from AKFIN (2024)

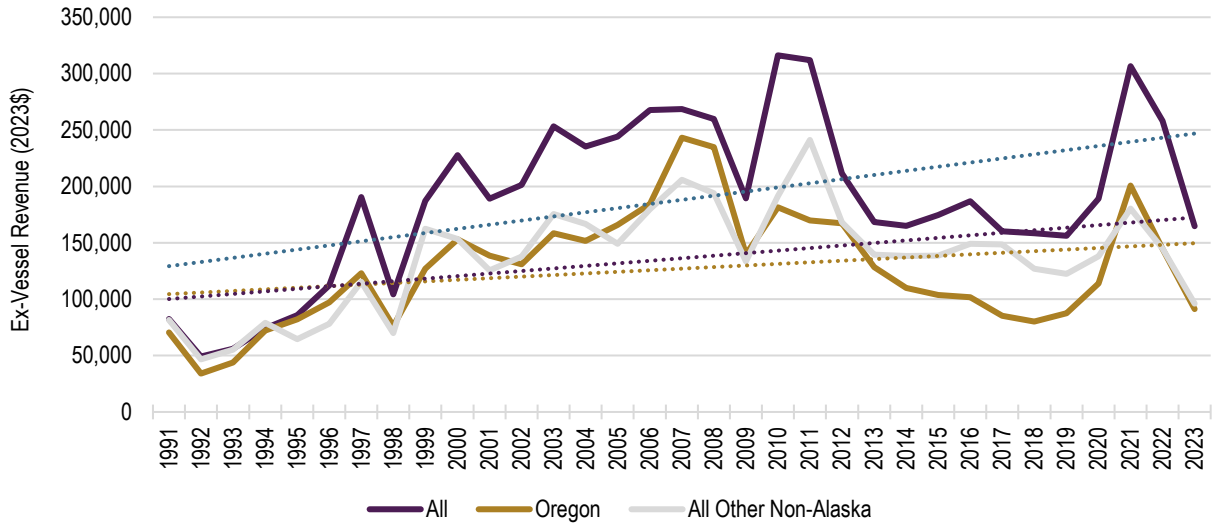
Figure 65 shows that average revenue per active participant in the halibut fishery exhibited an overall upward trend, with non-Alaska participants experiencing the greatest increase. The average revenue of participants residing in Washinton showed the largest overall increase (Figure 66).

Figure 65. Average Adjusted Revenue Per Person in the Halibut IFQ Fishery—All Participants, Alaska Residents, and Non-Alaskans



Source: Developed by Northern Economics based on data from AKFIN (2024)

Figure 66. Average Revenue Per Person in the Halibut IFQ Fishery—Residents of Washington and Oregon and Other Non-Alaskans

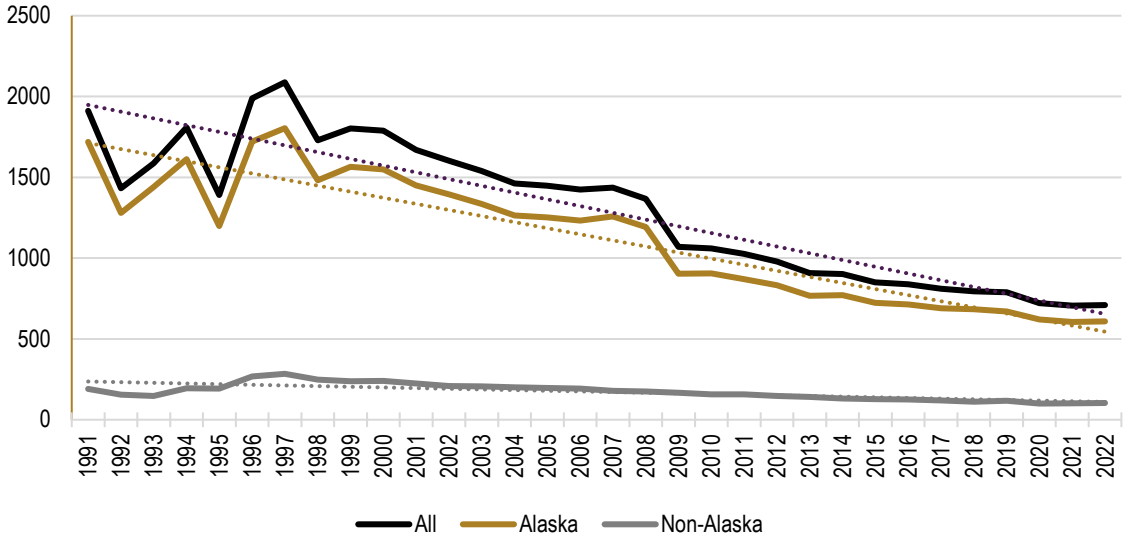


Source: Developed by Northern Economics based on data from AKFIN (2024)

Number of Vessels

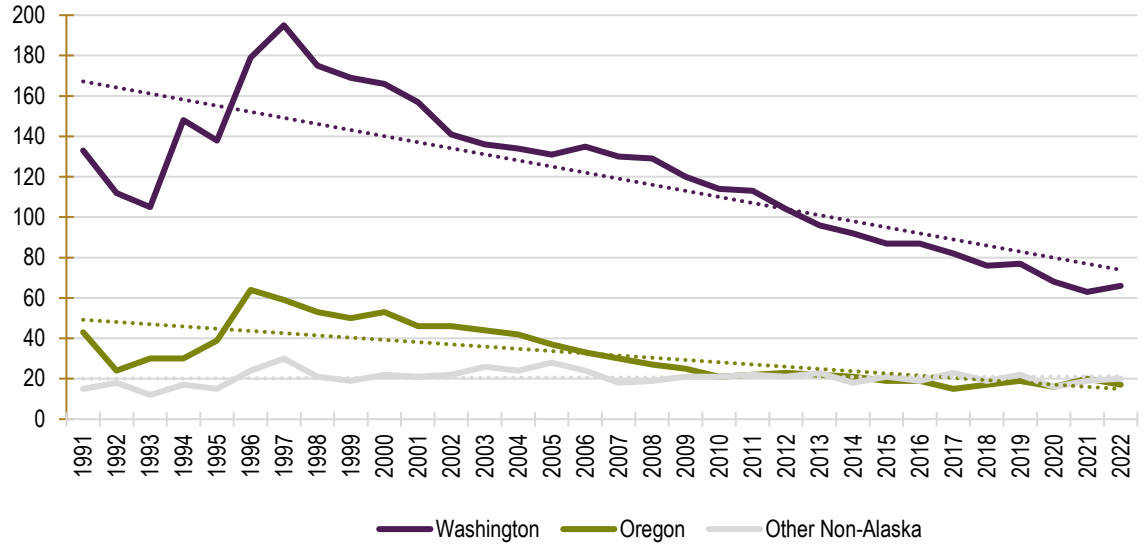
Figure 67 summarizes vessel numbers in the halibut IFQ fishery comparing Alaska v. Non-Alaska, while Figure 68 shows the number of vessels owned by residents of Washington, Oregon, and other non-Alaska locations.

Figure 67. Number of Vessels in the Halibut IFQ Fishery



Source: Developed by Northern Economics based on data from AKFIN (2024)

Figure 68. Number of Non-Alaska Vessels in the Halibut IFQ Fishery



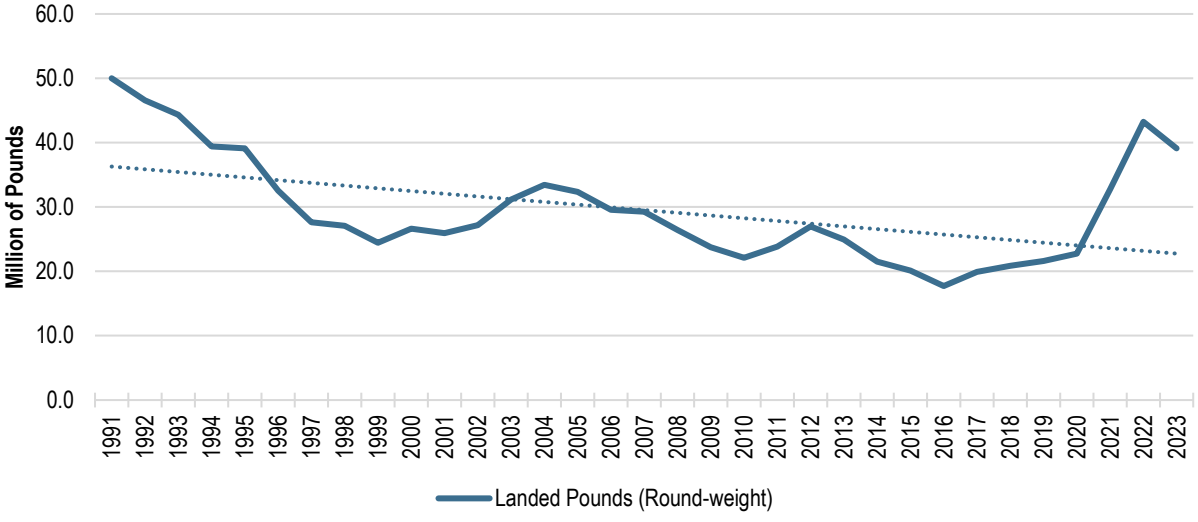
Source: Developed by Northern Economics based on data from AKFIN (2024)

2.6.2.2 Sablefish IFQ Fishery

Landings and Ex-vessel Revenue

Figure 69 shows that the pounds of sablefish landed during the baseline period and much of the IFQ Program period showed a declining trend due to decreases in the annual sablefish TAC. However, the amounts have increased since 2016 with increases in the TAC.

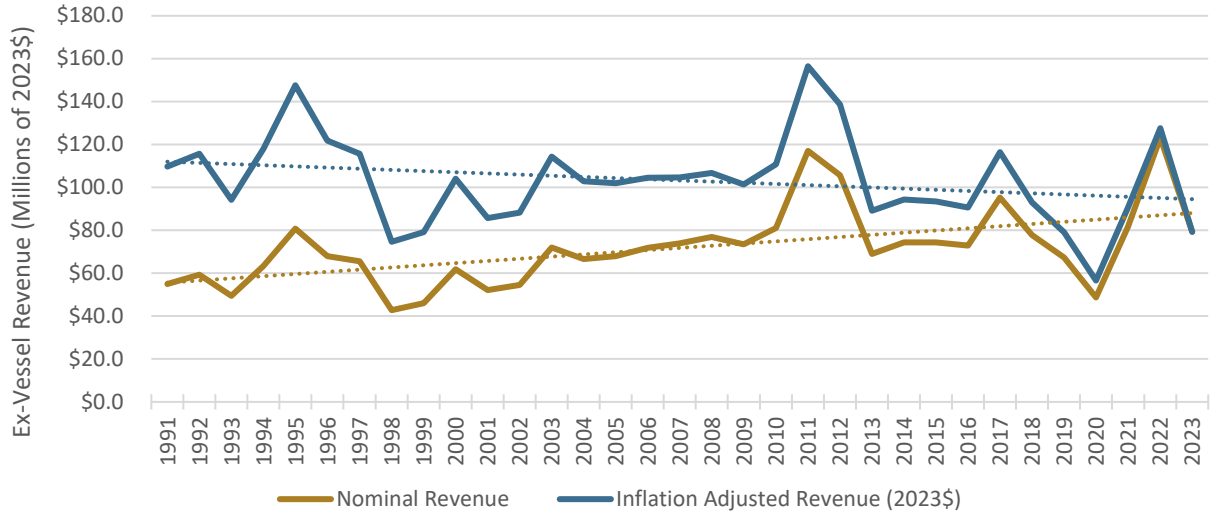
Figure 69. Landed Pounds in the Sablefish IFQ Fishery



Source: Developed by Northern Economics based on data from AKFIN (2024)

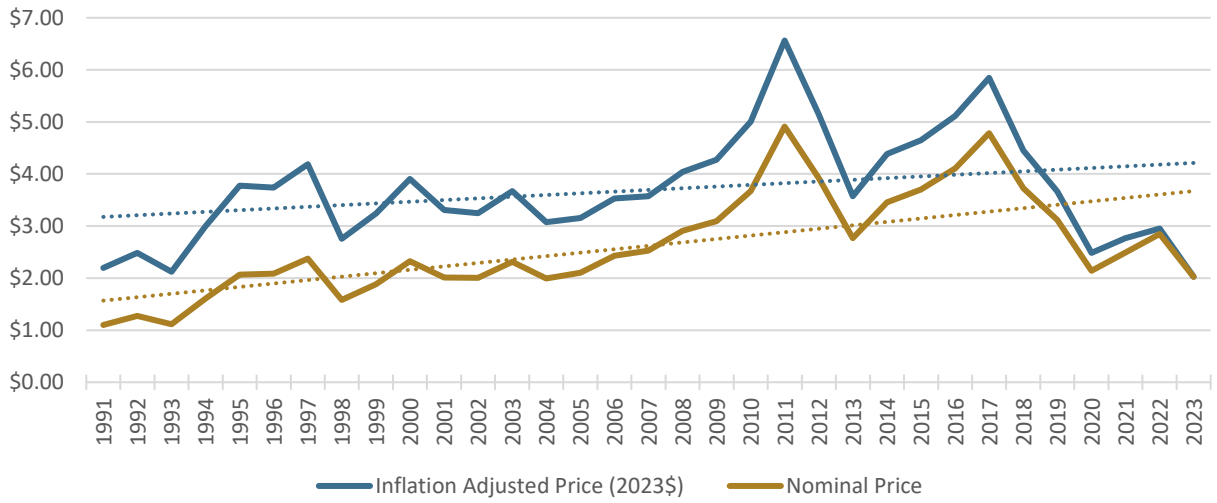
Despite the overall TAC decreases through 2016, Figure 70 shows that revenues in the sablefish fishery remained relatively stable or even rose in some years, as the rising ex-vessel prices shown in Figure 71 largely offset TAC decreases. However, between 2017 and 2020, ex-vessel revenue declined due to decreases in ex-vessel price as a result increases in supply. Inflation-adjusted prices decreased from a high of $5.84 in 2017 to $2.50 in 2020. In 2021 and 2022 landings increased from 22.8 million pounds in 2020 to 43.2 million pounds in 2022 before declining in 2023. During that time, prices rebounded slightly to $2.85 in 2022, leading to the highest ex-vessel revenue in 10 years at $127.7 million. In 2023 revenues fell back $80 million.

Figure 70. Ex-Vessel Revenue in the Sablefish IFQ Fishery



Source: Developed by Northern Economics based on data from AKFIN (2024)

Figure 71. Ex-Vessel Prices ($ per Round-Weight Pound) in the Sablefish IFQ Fishery

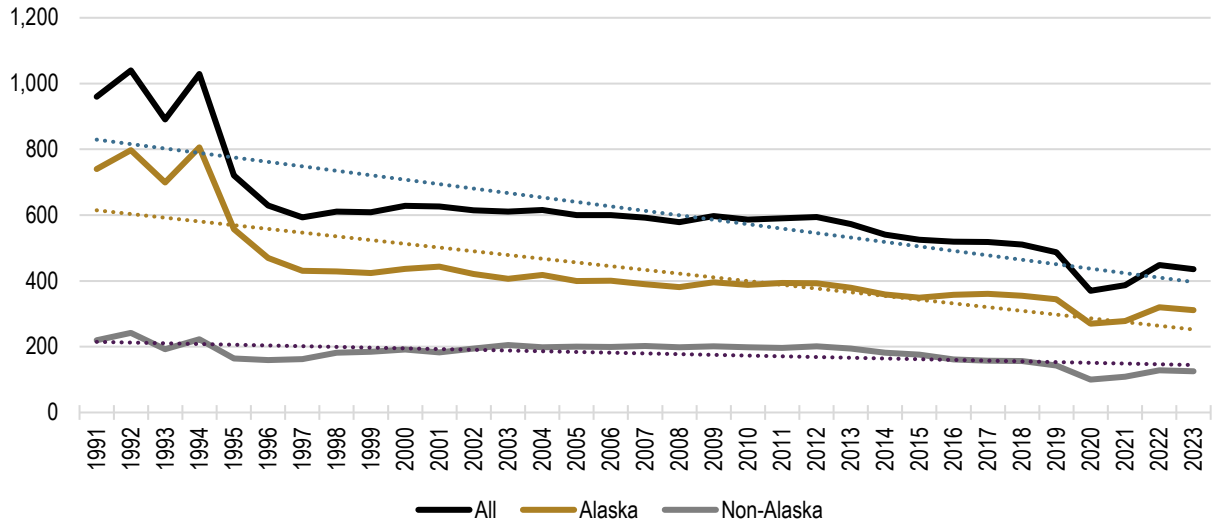


Source: Developed by Northern Economics based on data from AKFIN (2024)

Number of Active Permit Holders

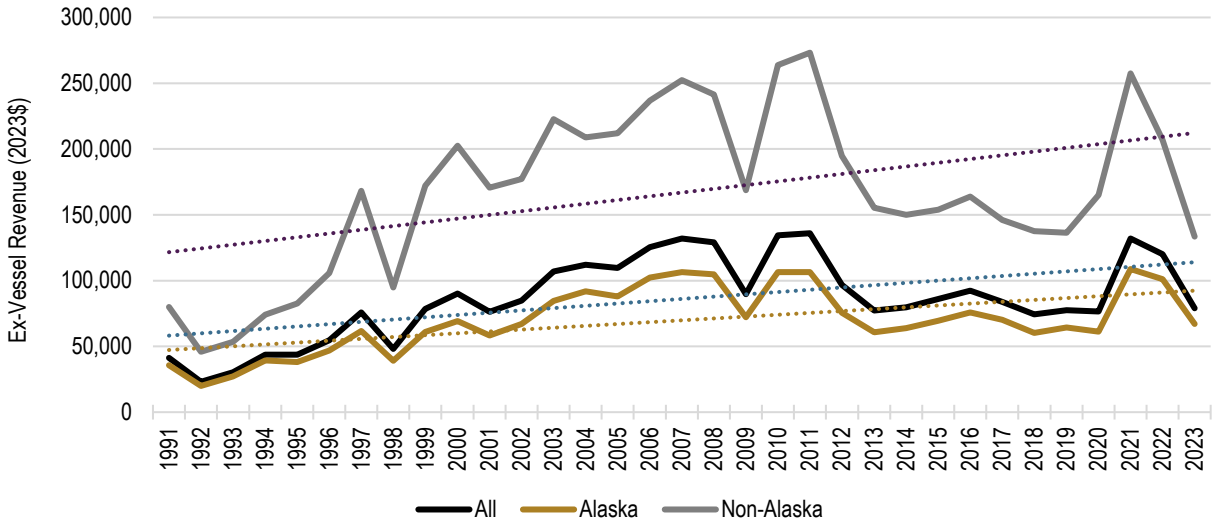
Figure 72 shows that in the years following the start of the IFQ Program in 1995, the number of persons active in the sablefish fishery decreased sharply in the first two years, largely stabilized until 2013, and then again showed a decreasing trend. The number of Alaska participants has been declining at a rate slightly lower than that of participants as a whole, while non-Alaska participants decreased at a much lower rate. As shown in Figure 73 active participants residing in Washington declined at a faster rate than participants residing in Oregon.

Figure 72. Number of Active Permit Holders in the Sablefish IFQ Fishery—Alaska and Non-Alaska Residents



Source: Developed by Northern Economics based on data from AKFIN (2024)

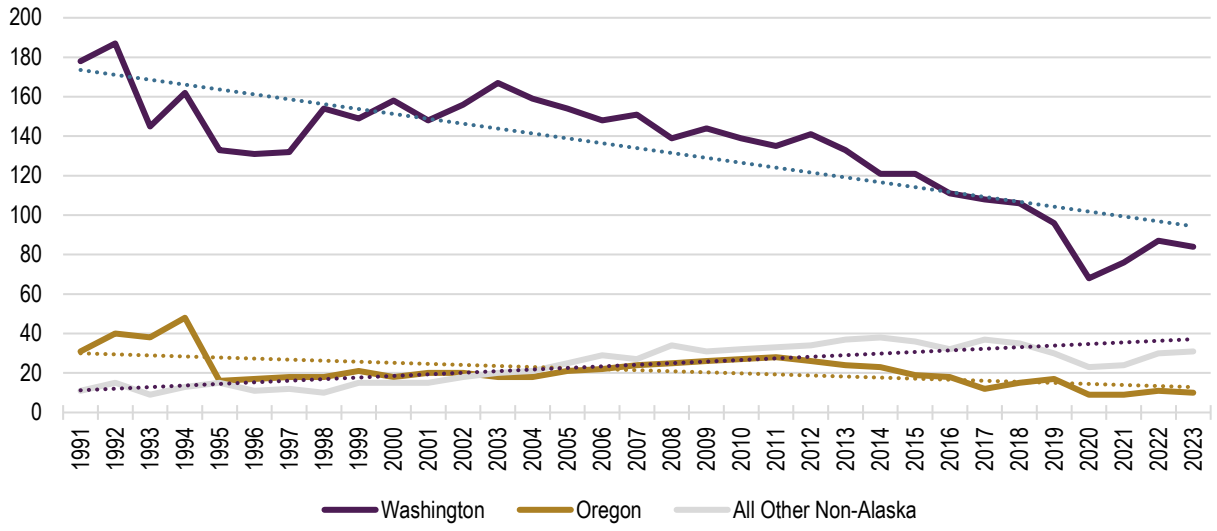
Figure 73. Number of Active Permit Holders in the Sablefish IFQ Fishery—Washington, Oregon, and Other Non-Alaskan



Source: Developed by Northern Economics based on data from AKFIN (2024)

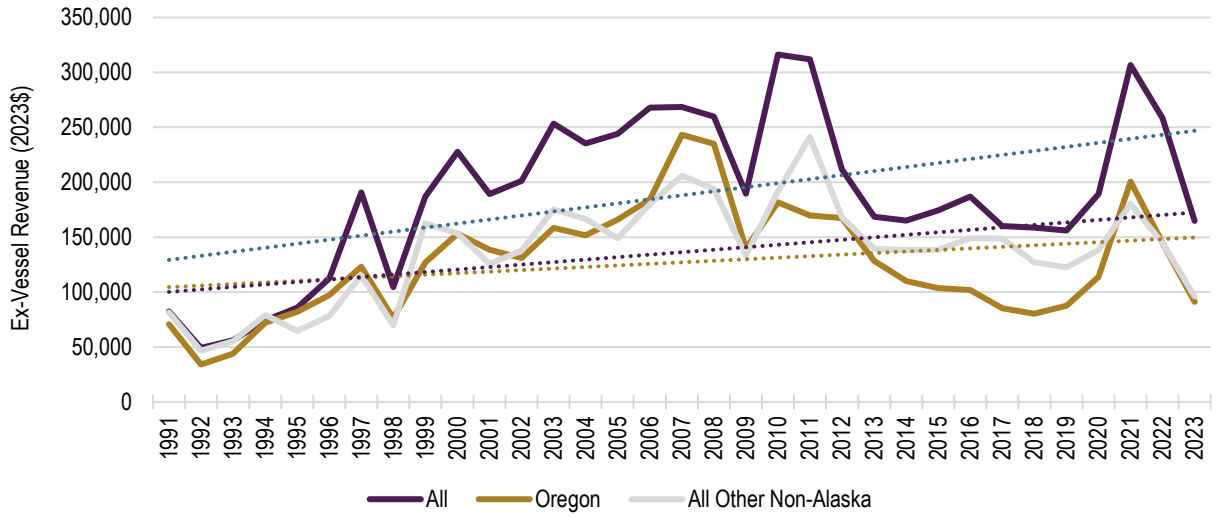
Figure 74 shows that average revenue per active participant in the sablefish fishery exhibited an overall upward trend, with non-Alaska participants experiencing the greatest increase. The average revenue of participants residing in Washinton showed the largest overall increase (Figure 75).

Figure 74. Average Revenue Per Person in the in the Sablefish IFQ Fishery—All Participants, Alaska Residents, and Non-Alaskans



Source: Developed by Northern Economics based on data from AKFIN (2024)

Figure 75. Average Revenue Per Person in the Sablefish IFQ Fishery —Residents of Washington and Oregon and Other Non-Alaskans

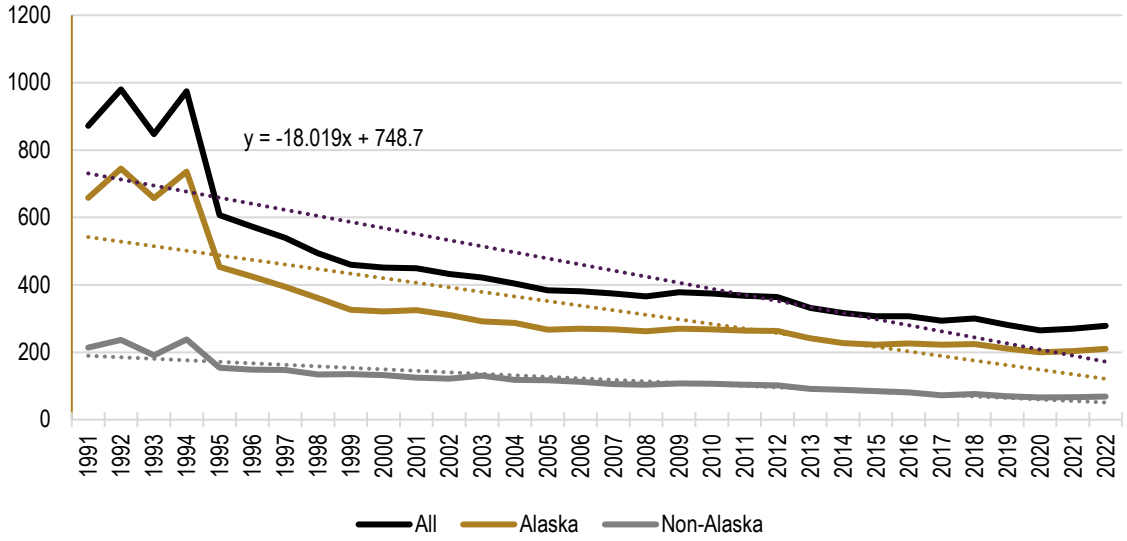


Source: Developed by Northern Economics based on data from AKFIN (2024)

Number of Vessels

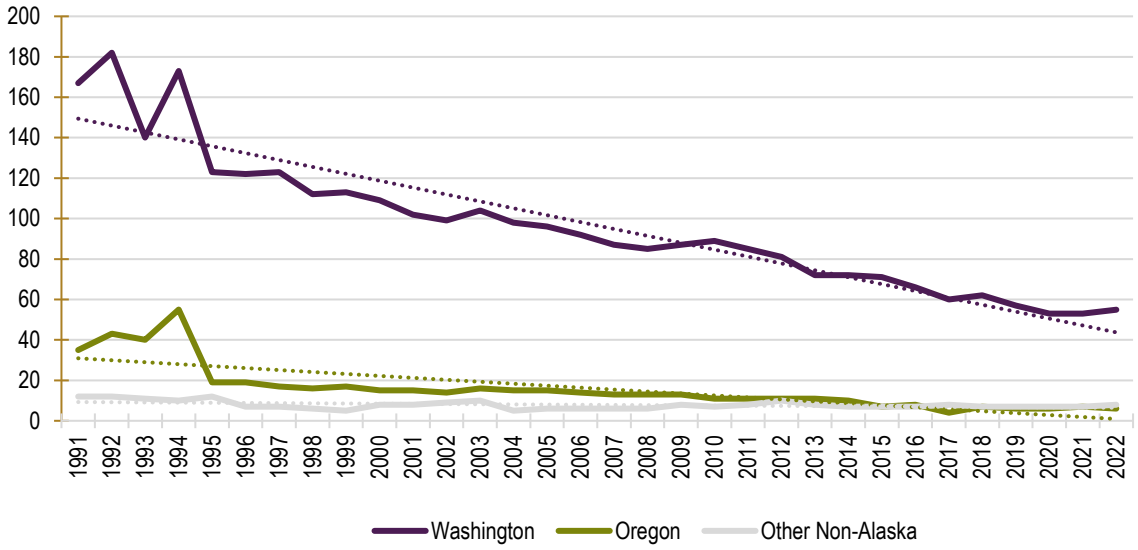
Figure 76 summarizes vessel numbers in the sablefish IFQ fishery comparing Alaska v. Non-Alaska, while Figure 77shows the number of vessels owned by residents of Washington, Oregon, and other non-Alaska locations.

Figure 76. Number of Vessels in the Sablefish IFQ Fishery



Source: Developed by Northern Economics based on data from AKFIN (2024)

Figure 77. Number of Non-Alaskan Vessels in the Sablefish IFQ Fishery



Source: Developed by Northern Economics based on data from AKFIN (2024)

2.7 Owner-Operated Characteristics of the Fleet

This section addresses the following objective of the final EIS for the IFQ Program:

- Objective 6: Assure that those directly involved in the fishery benefit from the IFQ Program by assuring that these two fisheries are dominated by owner/operator operations

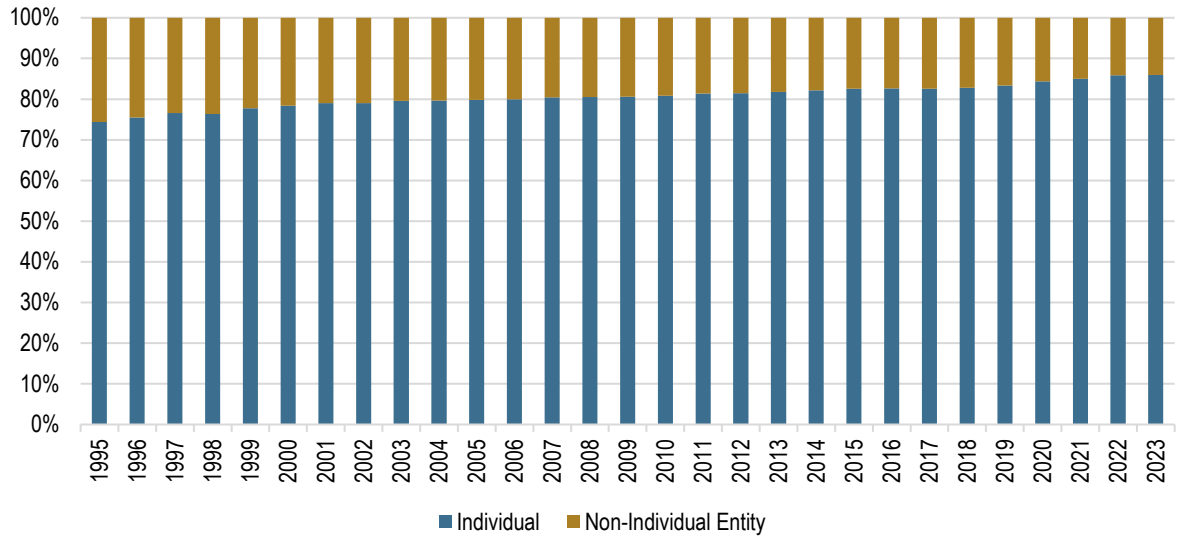
The section first presents information on holdings of catcher vessel QS by non-individual entities. This is followed by a discussion of leasing in the fisheries, including use of the available exemptions for catcher processor and catcher vessel QS. In a similar fashion, the use of hired masters is explored for both catcher processor and catcher vessel QS. The section concludes with a summary on the owner-operator characteristics of the fisheries.

2.7.1 Holdings of Catcher Vessel QS by Non-individual Entities

Since the implementation of the IFQ Program, catcher vessel QS acquisition by transfer was restricted to IFQ crewmembers, meaning non-individual entities could not acquire catcher vessel QS by transfer in halibut area 2C and the Southeast Outside District of the sablefish fishery, even if they were initial QS recipients. In all other areas, non-individual entities were prohibited from purchasing catcher vessel QS unless they were initial recipients of catcher QS. This remained the policy from the time the IFQ Program was implemented until December 1, 2014, at which point non-individual entities could no longer acquire additional catcher vessel QS in any IFQ area. The only exception is that individuals who initially were issued catcher vessel QS may transfer that QS to a corporation solely owned by the same individual.

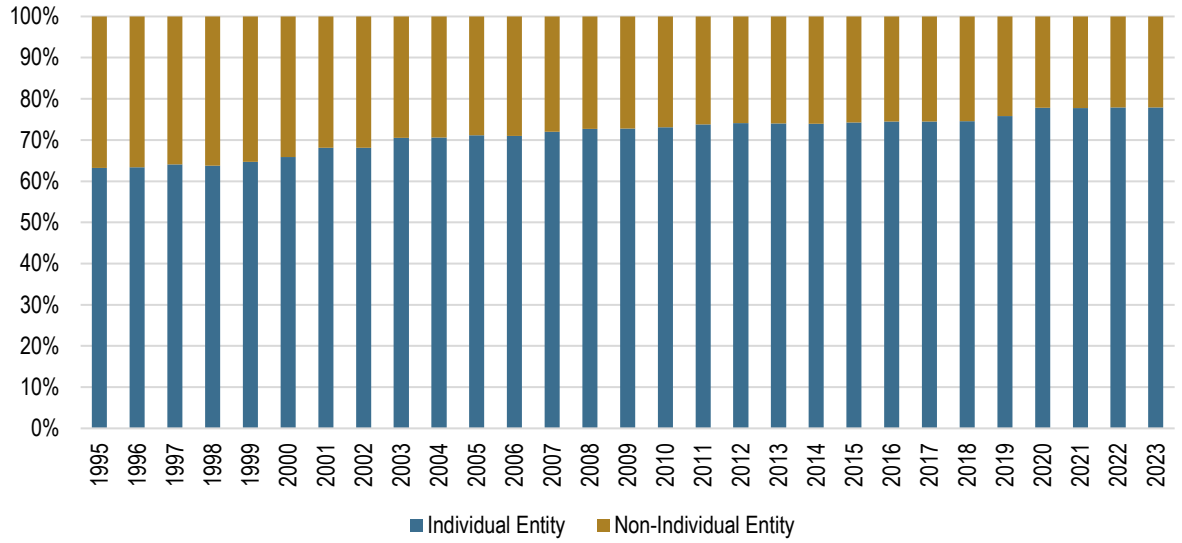
Figure 78 and Figure 79 show the percent of catcher vessel QS held by individual and non-individual entities in the IFQ fisheries from IFQ Program implementation through 2023. In both fisheries, there has been a gradual shift of catcher vessel QS from non-individual entities to individual entities. In 1995 non-individual entities held just over 25% of catcher vessel QS in the halibut fishery, which has decreased to only about 14% in 2023. Historically, the sablefish fishery has a larger share of non-individual holdings of catcher vessel QS, which remains true. In 1995 non-individual entities held about 37% of catcher QS in the sablefish fishery, which has decreased to about 22% in 2023. The 2016 IFQ Program Review previously speculated that the policy changes implemented in 2014 may slow the transfer of catcher vessel QS to individuals, but it does not appear to have had any major impacts as the pre-2014 transfer trends have persisted to 2023.

Figure 78. Percent of Catcher Vessel QS Held by Entity Type in the Halibut IFQ Fishery



Source: Developed by Northern Economics based on data from AKFIN (2024) and NMFS (2024d)

Figure 79. Percent of Catcher Vessel QS Held by Entity Type in the Sablefish IFQ Fishery



Source: Developed by Northern Economics based on data from AKFIN (2024) and NMFS (2024d)

Table 31 and Table 32 show the percent of catcher vessel QS held by individual and non-individual entities by IFQ regulatory area for halibut and sablefish from 1995 to 2023. In all IFQ areas for both the halibut and sablefish fisheries, individual entity holdings are greater in 2023 than 1995. The regulatory area with the largest individual catcher vessel QS increase in the halibut fishery was area

4D. In 1995, individual entities held 31.9% of shares compared to 74.9% of shares in 2023. Additionally, individual entity catcher vessel QS holdings in area 4B peaked from 2004 to 2006, when individual entities held 67.7%. From 2006 to present, the share of individual entity QS holdings has decreased slightly, and 2023 individual entity catcher vessel QS holdings were 59.6%. The regulatory area with the largest individual catcher vessel QS increase in the sablefish fishery was area WG. In 1995 individual entities held 56.4% of shares compared to 84.5% of shares in 2023. Additionally, sablefish individual entity catcher vessel QS holdings peaked in years other than 2023 in areas AI and CG. Individual entity QS holdings in area AI peaked in 2011 and 2012 when individual entities held 94.4% of catcher vessel QS. Area CG peaked in 2022 when individual entities held 71.3% of catcher vessel QS (which is very similar to 71.2% in 2023).

As previously mentioned in the 2016 IFQ Program Review, Halibut Area 2C and the Southeast Outside District of the sablefish fishery had the lowest share of non-individual catcher vessel QS holdings at the beginning of the IFQ Program. Due to the restriction on catcher vessel QS holdings for non-individual entities in these areas, it is expected that non-individual entities would still hold the lowest percentages of catcher vessel QS in area 2C and the Southeast Outside District. In 2023, halibut area 2C does have the lowest non-individual holdings of all halibut IFQ areas, but the Southeast Outside District does not have the lowest non-individual holdings. In 2023, the Berring Sea sablefish fishery has lower non-individual holdings than the Southeast Outside District. Additionally, at the time of the 2016 IFQ Program Review, the Aleutian Islands area also had lower non-individual QS holdings than the Southeast Outside District, but this is no longer the case. There are many different factors that can influence QS movement between individual and non-individual entities including earnings expectations, opportunity costs due to opportunities in other fisheries, and difficulties harvesting the full TACs in some areas.

Table 31. Percent of Catcher Vessel QS Held by Individuals and Non-individual Entities in the Halibut Fishery

	2C		3A		3B		4A		4B		4C		4D		4E	
Year	Individual	Non-Individual	Individual	Non-Individual	Individual	Non-Individual	Individual	Non-Individual	Individual	Non-Individual	Individual	Non-Individual	Individual	Non-Individual	Individual	Non-Individual
1995	96.9%	3.1%	74.1%	25.9%	63.4%	36.6%	56.9%	43.1%	48.9%	51.1%	61.2%	38.8%	31.9%	68.1%	91.7%	8.3%
1996	97.3%	2.7%	75.2%	24.8%	64.0%	36.0%	59.2%	40.8%	50.4%	49.6%	72.0%	28.0%	38.4%	61.6%	91.7%	8.3%
1997	97.6%	2.4%	75.9%	24.1%	65.0%	35.0%	64.0%	36.0%	53.0%	47.0%	76.3%	23.7%	45.7%	54.3%	91.7%	8.3%
1998	97.6%	2.4%	75.5%	24.5%	64.6%	35.4%	64.0%	36.0%	55.1%	44.9%	77.6%	22.4%	47.9%	52.1%	91.7%	8.3%
1999	97.8%	2.2%	77.0%	23.0%	66.8%	33.2%	65.4%	34.6%	56.0%	44.0%	77.9%	22.1%	51.4%	48.6%	91.7%	8.3%
2000	97.9%	2.1%	77.6%	22.4%	68.0%	32.0%	67.4%	32.6%	58.1%	41.9%	78.1%	21.9%	54.0%	46.0%	91.7%	8.3%
2001	98.1%	1.9%	78.2%	21.8%	68.3%	31.7%	68.4%	31.6%	61.7%	38.3%	76.5%	23.5%	54.9%	45.1%	91.7%	8.3%
2002	98.1%	1.9%	78.2%	21.8%	68.3%	31.7%	68.4%	31.6%	61.7%	38.3%	76.5%	23.5%	54.9%	45.1%	91.7%	8.3%
2003	98.3%	1.7%	78.7%	21.3%	69.4%	30.6%	68.1%	31.9%	64.5%	35.5%	78.6%	21.4%	58.7%	41.3%	91.7%	8.3%
2004	98.5%	1.5%	78.4%	21.6%	69.3%	30.7%	71.2%	28.8%	67.7%	32.3%	78.6%	21.4%	58.7%	41.3%	91.7%	8.3%
2005	98.5%	1.5%	78.2%	21.8%	69.8%	30.2%	74.7%	25.3%	67.7%	32.3%	78.6%	21.4%	58.7%	41.3%	91.7%	8.3%
2006	98.5%	1.5%	78.4%	21.6%	69.8%	30.2%	75.7%	24.3%	67.7%	32.3%	78.6%	21.4%	58.7%	41.3%	91.7%	8.3%
2007	98.5%	1.5%	78.5%	21.5%	70.8%	29.2%	81.4%	18.6%	65.8%	34.2%	82.7%	17.3%	59.9%	40.1%	91.7%	8.3%
2008	98.7%	1.3%	78.6%	21.4%	71.1%	28.9%	78.6%	21.4%	67.3%	32.7%	82.7%	17.3%	59.9%	40.1%	91.7%	8.3%
2009	98.8%	1.2%	78.7%	21.3%	71.2%	28.8%	78.6%	21.4%	66.8%	33.2%	82.7%	17.3%	59.9%	40.1%	91.7%	8.3%
2010	98.8%	1.2%	79.2%	20.8%	71.0%	29.0%	78.4%	21.6%	66.7%	33.3%	82.7%	17.3%	60.2%	39.8%	91.7%	8.3%
2011	98.8%	1.2%	79.6%	20.4%	72.8%	27.2%	78.6%	21.4%	66.7%	33.3%	82.7%	17.3%	62.9%	37.1%	91.7%	8.3%
2012	98.8%	1.2%	79.6%	20.4%	72.8%	27.2%	79.7%	20.3%	66.7%	33.3%	82.7%	17.3%	62.9%	37.1%	91.6%	8.4%
2013	98.8%	1.2%	79.7%	20.3%	74.1%	25.9%	80.4%	19.6%	66.7%	33.3%	82.7%	17.3%	62.9%	37.1%	91.6%	8.4%
2014	98.8%	1.2%	80.6%	19.4%	74.7%	25.3%	80.7%	19.3%	62.3%	37.7%	81.6%	18.4%	61.9%	38.1%	91.6%	8.4%
2015	98.8%	1.2%	81.0%	19.0%	75.5%	24.5%	80.8%	19.2%	62.3%	37.7%	82.7%	17.3%	62.9%	37.1%	91.6%	8.4%
2016	98.8%	1.2%	81.1%	18.9%	75.7%	24.3%	80.8%	19.2%	61.6%	38.4%	82.7%	17.3%	62.9%	37.1%	91.6%	8.4%
2017	98.6%	1.4%	81.1%	18.9%	75.7%	24.3%	80.8%	19.2%	61.4%	38.6%	82.7%	17.3%	62.9%	37.1%	91.8%	8.2%
2018	98.7%	1.3%	81.4%	18.6%	75.7%	24.3%	81.7%	18.3%	61.6%	38.4%	82.7%	17.3%	62.9%	37.1%	92.2%	7.8%
2019	98.7%	1.3%	82.2%	17.8%	76.9%	23.1%	81.7%	18.3%	56.9%	43.1%	82.7%	17.3%	62.9%	37.1%	92.2%	7.8%
2020	98.9%	1.1%	83.3%	16.7%	78.8%	21.2%	81.7%	18.3%	60.0%	40.0%	82.7%	17.3%	66.7%	33.3%	92.2%	7.8%
2021	99.0%	1.0%	84.0%	16.0%	79.3%	20.7%	82.2%	17.8%	58.0%	42.0%	84.7%	15.3%	74.9%	25.1%	92.2%	7.8%
2022	99.0%	1.0%	84.9%	15.1%	80.8%	19.2%	82.2%	17.8%	59.6%	40.4%	84.7%	15.3%	74.9%	25.1%	92.2%	7.8%
2023	99.0%	1.0%	84.8%	15.2%	81.2%	18.8%	84.6%	15.4%	59.6%	40.4%	84.7%	15.3%	74.9%	25.1%	92.2%	7.8%

Source: Developed by Northern Economics based on data from AKFIN (2024) and NMFS (2024d)

Table 32. Percent of Catcher Vessel QS Held by Individuals and Non-individual Entities in the Sablefish Fishery

	AI		BS		CG		SE		WG		WY	
	Individual	Non-Individual	Individual	Non-Individual	Individual	Non-Individual	Individual	Non-Individual	Individual	Non-Individual	Individual	Non-Individual
1995	54.1%	45.9%	37.1%	62.9%	56.0%	44.0%	86.7%	13.3%	56.4%	43.6%	59.9%	40.1%
1996	54.8%	45.2%	36.2%	63.8%	56.4%	43.6%	86.9%	13.1%	56.0%	44.0%	60.0%	40.0%
1997	55.3%	44.7%	36.6%	63.4%	57.5%	42.5%	87.4%	12.6%	57.9%	42.1%	60.1%	39.9%
1998	63.0%	37.0%	36.5%	63.5%	56.3%	43.7%	87.4%	12.6%	55.8%	44.2%	59.4%	40.6%
1999	62.7%	37.3%	41.6%	58.4%	57.3%	42.7%	88.1%	11.9%	57.1%	42.9%	59.7%	40.3%
2000	62.9%	37.1%	48.3%	51.7%	59.3%	40.7%	88.3%	11.7%	59.5%	40.5%	59.1%	40.9%
2001	70.5%	29.5%	50.9%	49.1%	62.0%	38.0%	88.4%	11.6%	62.2%	37.8%	61.3%	38.7%
2002	70.5%	29.5%	50.9%	49.1%	62.0%	38.0%	88.4%	11.6%	62.2%	37.8%	61.3%	38.7%
2003	80.3%	19.7%	68.8%	31.2%	63.2%	36.8%	88.7%	11.3%	66.9%	33.1%	61.5%	38.5%
2004	82.2%	17.8%	76.5%	23.5%	62.3%	37.7%	89.3%	10.7%	64.6%	35.4%	61.6%	38.4%
2005	83.8%	16.2%	79.8%	20.2%	62.2%	37.8%	90.5%	9.5%	66.8%	33.2%	61.2%	38.8%
2006	84.1%	15.9%	80.9%	19.1%	61.8%	38.2%	90.5%	9.5%	66.0%	34.0%	61.2%	38.8%
2007	86.2%	13.8%	83.9%	16.1%	62.8%	37.2%	90.7%	9.3%	73.1%	26.9%	59.3%	40.7%
2008	86.2%	13.8%	95.7%	4.3%	62.7%	37.3%	90.8%	9.2%	73.8%	26.2%	60.2%	39.8%
2009	87.6%	12.4%	95.8%	4.2%	62.8%	37.2%	90.8%	9.2%	73.2%	26.8%	60.2%	39.8%
2010	87.6%	12.4%	95.8%	4.2%	63.2%	36.8%	90.9%	9.1%	74.8%	25.2%	60.2%	39.8%
2011	94.4%	5.6%	96.2%	3.8%	63.2%	36.8%	90.9%	9.1%	75.1%	24.9%	61.3%	38.7%
2012	94.4%	5.6%	95.0%	5.0%	64.2%	35.8%	90.9%	9.1%	75.1%	24.9%	61.3%	38.7%
2013	93.8%	6.2%	94.3%	5.7%	64.0%	36.0%	90.9%	9.1%	76.0%	24.0%	61.3%	38.7%
2014	93.3%	6.7%	94.8%	5.2%	64.0%	36.0%	90.9%	9.1%	76.0%	24.0%	61.3%	38.7%
2015	93.7%	6.3%	96.4%	3.6%	64.5%	35.5%	90.9%	9.1%	76.0%	24.0%	61.3%	38.7%
2016	93.7%	6.3%	96.4%	3.6%	64.8%	35.2%	91.2%	8.8%	76.0%	24.0%	61.6%	38.4%
2017	92.7%	7.3%	96.5%	3.5%	64.8%	35.2%	91.2%	8.8%	76.3%	23.7%	61.6%	38.4%
2018	89.7%	10.3%	96.6%	3.4%	64.8%	35.2%	91.3%	8.7%	76.4%	23.6%	62.6%	37.4%
2019	89.7%	10.3%	96.6%	3.4%	67.1%	32.9%	91.3%	8.7%	78.6%	21.4%	63.5%	36.5%
2020	89.7%	10.3%	96.6%	3.4%	70.2%	29.8%	92.1%	7.9%	82.4%	17.6%	65.1%	34.9%
2021	86.7%	13.3%	96.6%	3.4%	70.6%	29.4%	92.1%	7.9%	82.4%	17.6%	65.1%	34.9%
2022	81.2%	18.8%	96.6%	3.4%	71.3%	28.7%	92.1%	7.9%	84.5%	15.5%	65.1%	34.9%
2023	81.2%	18.8%	96.6%	3.4%	71.2%	28.8%	92.1%	7.9%	84.5%	15.5%	65.1%	34.9%

Source: Developed by Northern Economics based on data from AKFIN (2024) and NMFS (2024d)

2.7.2 Leasing

Objective 6 of the program is to "assure that those directly involved in the fishery benefit from the IFQ Program by assuring that these two fisheries are dominated by owner/operator operations". To achieve this objective, in the original program and in subsequent amendments, the Council has focused on owner-operated fleet for the catcher vessel fleet. To support this, leasing of catcher vessel shares has been generally prohibited since 1998; however, the following exceptions exist:

1. Leasing of IFQ derived from Class A (catcher processor) shares
2. Leasing of catcher vessel shares through:
    a. Medical leases,
    b. Beneficiary leases (Survivorship transfer privileges)
    c. Military leases,
    d. Leases through CQEs, and
    e. IFQ to GAF transfers

This section reviews each of these major leasing provisions and trends in the use of these provisions in order to evaluate success in meeting Objective 6.

2.7.2.1 Leasing of IFQ Derived from Class A QS

Class A (catcher-processor) QS holders have always been able to lease their IFQ in both fisheries and across all IFQ regulatory areas, as well as use a hired master to harvest their IFQ. Lease transactions are in effect for an IFQ year, and they expire on December 31st of the lease year. Class A QS represents a small share of total QS in the halibut IFQ fishery, making up 2% to 8% of total QS depending on the area. However, in the sablefish fishery, Class A QS makes up a greater share of total QS, accounting for 8% to 56% of shares depending on the area.

Table 33 shows the percentage of Class A IFQ leased and percentage of Class A QS holders who leased their Class A IFQ for both the halibut and sablefish fisheries from 2000 to 2023. For both fisheries, the percentage of Class A halibut IFQ that was leased has decreased from 2000 to 2023. Additionally, the percentage of Class A halibut QS holders who leased their Class A IFQ decreased in both fisheries from 2000 to 2023. According to the 2016 IFQ Program Review, Class A QS has moved from individuals to non-individual entities since IFQ Program implementation. The previous review asserted that decreasing percentages of Class A IFQ that was leased may be associated with an increasing reliance on hired masters by Class A QS holders.

Table 33. Percentage of Class A QS units leased and percentage of Class A QS holders who leased their IFQ in the IFQ fisheries

Year	Percentage of Class A Halibut IFQ Leased	Percentage of Class A Halibut QS Holders who leased their Class A IFQ	Percentage of Class A Sablefish IFQ Leased	Percentage of Class A Sablefish QS Holders who leased their Class A IFQ
2000	25.7%	31.7%	21.1%	34.4%
2001	24.4%	34.9%	19.2%	32.8%
2002	18.4%	34.9%	16.4%	29.7%
2003	15.7%	29.7%	22.2%	25.8%
2004	17.6%	21.5%	12.8%	23.2%
2005	16.1%	26.2%	9.2%	18.1%
2006	16.0%	22.4%	7.4%	18.4%
2007	16.3%	25.8%	6.5%	18.7%
2008	12.5%	17.4%	7.7%	12.3%
2009	13.0%	18.8%	7.7%	11.9%
2010	12.3%	20.6%	7.8%	13.3%
2011	4.6%	17.6%	5.6%	8.8%
2012	10.0%	20.3%	7.9%	10.9%
2013	5.2%	12.9%	6.7%	10.1%
2014	9.4%	16.2%	4.6%	8.2%
2015	8.1%	15.9%	4.4%	8.2%
2016	9.2%	17.4%	5.1%	10.3%
2017	6.3%	14.5%	3.0%	11.3%
2018	7.1%	15.9%	2.7%	11.3%
2019	11.8%	15.9%	2.8%	10.1%
2020	12.3%	20.9%	2.8%	9.0%
2021	8.9%	16.4%	2.7%	14.0%
2022	3.1%	10.3%	1.3%	8.2%
2023	2.9%	7.5%	1.7%	9.3%

Note: Class A shares are catcher-processor shares

Source: Developed by Northern Economics based on data from AKFIN (2024) and NMFS (2024d)

2.7.2.2 Leasing of IFQ Derived from Catcher Vessel QS

When the IFQ Program started, holders of catcher vessel QS were allowed to lease up to 10% of their IFQ in a given area. This was due to a temporary leasing provision that was intended to balance the council's objectives for catcher vessel shares. These provisions were in place until they expired on January 2, 1998 when the regulations allowing the leasing were not renewed, meaning that leasing would allowed in 1995, 1996, and 1997 but no longer allowed since 1998. As a result, since 1998, leasing of catcher vessel IFQ has been generally prohibited except for in five specific circumstances: 1) medical leases, 2) survivorship transfer privileges (beneficiary leases), 3) military leases, 4) leases through CQEs, and 5) IFQ to guided angler fish (GAF) transfers.

Medical Leases

In the event of medical hardship, those otherwise not eligible to use hired masters can lease their catcher vessel QS. The medical lease provision was intended to provide shareholders a means of harvesting their catcher vessel IFQ in times of hardship. Prior to implementation of the amendment in 2007, during hardship QS holders had to either divest themselves of their QS or sell their QS to friends or family with a tacit agreement that they would return the QS once the QS holder recovered.

At the time of the 2016 IFQ Program Review, there was some inter-annual variability, but generally the number of transfers and unique transferors increased from the time of implementation of the medical lease provision. Data at the time also indicated that while the number of transferors had generally increased, so did the relative proportion of their transfers. The 2016 IFQ Program Review also concluded that initial recipients were utilizing the medical lease provision for leasing catcher vessel IFQ in areas in which they could potentially use hired masters, suggesting that some QS holders may have been using the medical lease provision as an alternative to using a hired master. Additionally, at the time of the 2016 report, it was concluded that second-generation shareholders accounted for the majority of medical leases since they do not have the ability to use a hired master, which was not unexpected. Table 34 shows the total number of medical lease transactions by species and year, and the ratio of the number of people transferring to the number of transfers. From 2007 to 2023, there has been an increasing trend with the sharpest increase from 2019 to 2020. The only exception to the trend was 2021. The sharp increase from 2019 to 2020 coincides with a rule change (85 FR 8477, effective March 15, 2020) that allows shareholders to use the medical lease provision 3 out of 7 years instead of the previous 2 out of 5 years. This rule also made other changes may have made it easier for people to apply for medical transfers. These changes included the following:

- Changed definition of 'health care provider' to be more flexible to more types of providers
- Allowed healthcare providers outside the US to sign the medical transfer form
- Simplified administrative duties to streamline approvals of medical leases

These changes, alongside the impacts of the COVID-19 pandemic, may have resulted in a greater number of people using the medical lease provision at a given time in recent years.

If the ratio of transfers to transferors included in Table 34 is equal to 1, then there would be one transferor for each transfer. However, many QS holders have QS in multiple areas and vessel classes, so one transferor can have more than one medical lease transfer. The ratios in both fisheries have increased slightly from 2014 to 2023, and both are close to 1.5. This ratio along with increases in the actual number of persons transferring indicate that while the number of people transferring has increased, so has the relative proportion of their transfers.

The 2016 IFQ Program Review also found that initial recipients were utilizing the medical lease provision for leasing catcher vessel IFQ in areas in which they could potentially use hired masters.

The authors of the 2016 report concluded that this suggested some QS holders may have been using the medical lease provision as an alternative to using a hired master. They believed that initial recipients may have an incentive to use a medical lease instead of a hired master since it eliminates the 12-month 20% vessel ownership requirement.

Table 34. Utilization of the Medical Lease Provision

	Transfers		QS Transferred		Persons Transferring		Persons Receiving		Ratio of Transfers: Transferors	
Year	Halibut	Sablefish	Halibut	Sablefish	Halibut	Sablefish	Halibut	Sablefish	Halibut	Sablefish
2007	17	2	152,080	34,840	15	2	15	2	1.13	1.00
2008	55	17	450,987	222,899	47	13	44	15	1.17	1.31
2009	87	22	577,084	297,141	67	17	60	18	1.30	1.29
2010	80	19	458,461	221,391	60	15	50	17	1.33	1.27
2011	87	18	437,826	345,352	66	15	59	16	1.32	1.20
2012	82	11	381,922	186,673	61	11	57	11	1.34	1.00
2013	87	25	418,669	370,916	65	21	57	20	1.34	1.19
2014	98	33	317,071	473,368	73	29	57	25	1.34	1.14
2015	133	46	564,303	470,833	94	37	78	35	1.41	1.24
2016	184	68	815,111	651,128	126	49	98	38	1.46	1.39
2017	217	88	1,064,555	972,889	133	58	101	51	1.63	1.52
2018	236	111	1,103,787	1,649,895	162	75	122	65	1.46	1.48
2019	262	121	1,324,546	1,636,863	175	83	125	65	1.50	1.46
2020	413	166	2,133,048	2,996,102	292	115	166	79	1.41	1.44
2021	74	28	396,271	879,074	57	21	45	19	1.30	1.33
2022	434	179	2,883,788	5,294,200	291	122	192	95	1.49	1.47
2023	477	188	2,810,910	6,336,776	320	129	195	104	1.49	1.46

Source: NPFMC (2024)

Beneficiary Leases

Within the IFQ Program, beneficiaries can lease IFQ from catcher vessel QS that they received as a descendent of a QS holder. The provision that allows these beneficiary leases went into effect in September of 1996, so 1997 is the first full year with the provision in place. Table 35 and Table 36 show summaries of beneficiary transfers for the halibut fishery from 2000 to 2023. The number of beneficiary transfers in the halibut fishery varies year to year but has been very high in 2022 and 2023 compared to years past. The number of beneficiary transfers in the sablefish fishery also fluctuates year to year but is generally lower than the number of transfers in the halibut fishery.

The tables also include data on whether individuals kept all the beneficiary transfer shares for five years after the year they received the shares. It is worth noting that for transfers that occurred after 2018, the full period has not yet passed, so the data was filled in based on the current status of the shares. In the halibut fishery, excluding post-2018 transferees, the year in which the greatest

proportion of beneficiaries kept all their shares for at least 5 years following the year in which they received the shares was 2000. In 2000 54.5% of beneficiaries kept all the shares that they inherited. In the sablefish fishery, the data in this column is more sporadic since in many years there were very few transfers. There were many years in which beneficiaries in that year sold their inherited QS within 5 years. There were also occasionally years in which all beneficiaries kept their QS.

The final column in the table contains data on the most recent year that the individual was active in the fishery, regardless of whether they kept the shares they inherited. As expected, in both fisheries recent years have a greater share of beneficiaries who are still active in the fishery compared with previous years.

Since 2021, beneficiary transfers for halibut reached historic highs, at 39 transfers in 2022 and 36 in 2023 (Table 35). Prior to 2022, the highest number of beneficiary transfers for halibut was 19, in 2013. In the ten-year period from 2011-2020, on average, there were 12.7 transfers per year.

Beneficiary transfers for sablefish have also increased in recent years. Since 2020, there have been 10 or more transfers in each year, with 15 and 16 transfers in 2022 and 2023, respectively (Table 36). In the 2010-2019 period, there was on average 4.2 transfers a year, between 2020 and 2023 there were 12.75, nearly a three-fold increase.

These changes in the use of the beneficiary transfers may also stem from the same rulemaking that changed medical lease provisions (85 FR 8477, effective March 15, 2020). The changes to the beneficiary transfer provision included 1. Defining 'immediate family member' and 2. Modifying regulations to add estate representatives to the list of people who can receive IFQ held by the decedent for up to three years. According to the Final Rule, these changes were expected to improve and simplify the process of approving beneficiary transfers without causing undue impacts on a QS holder's estate planning.

Table 35. Beneficiary Transfers of Halibut QS

Year	Number of Transfers	Kept all acquired shares*	Still Active in the Fishery in 2023
2000	11	54.5%	45.5%
2001	6	0.0%	16.7%
2002	8	0.0%	0.0%
2003	16	6.3%	12.5%
2004	14	0.0%	14.3%
2005	15	0.0%	0.0%
2006	9	0.0%	0.0%
2007	4	25.0%	0.0%
2008	16	12.5%	0.0%
2009	9	22.2%	33.3%
2010	17	41.2%	41.2%
2011	14	21.4%	78.6%
2012	17	0.0%	64.7%
2013	19	31.6%	31.6%
2014	6	0.0%	0.0%
2015	10	40.0%	30.0%
2016	8	0.0%	37.5%
2017	17	17.6%	17.6%
2018	6	50.0%	50.0%
2019	14	21.4%	35.7%
2020	17	17.6%	82.4%
2021	13	76.9%	84.6%
2022	39	53.8%	66.7%
2023	36	80.6%	94.4%

**Note: This column includes beneficiaries who kept all their QS for the year it was received and a minimum of the five subsequent seasons. It does not include individuals who sold all or some of their shares during the six-year period or after. Not all individuals who still have their shares after the six-year period are still active. For transfers that occurred after 2018, the full period has not passed, so their inclusion in the "kept" or "sold" groups were based on the current status of the shares.*

Source: Developed by Northern Economics based on data from AKFIN (2024)

Table 36. Beneficiary Transfers of Sablefish QS

Year	Number of Transfers	Kept all acquired shares*	Still Active in the Fishery in 2023
2000	2	100%	100%
2001	0	0%	0%
2002	5	40%	80%
2003	5	0%	20%
2004	2	0%	0%
2005	4	0%	0%
2006	1	0%	0%
2007	2	0%	0%
2008	5	0%	0%
2009	0	0%	0%
2010	7	71%	71%
2011	5	20%	0%
2012	4	0%	100%
2013	7	0%	71%
2014	2	0%	100%
2015	3	100%	100%
2016	3	0%	0%
2017	9	0%	0%
2018	2	50%	100%
2019	0	0%	0%
2020	10	20%	60%
2021	10	80%	100%
2022	15	60%	60%
2023	16	88%	100%

**Note: This column includes beneficiaries who kept all their QS for the year it was received and a minimum of the five subsequent seasons. It does not include individuals who sold all or some of their shares during the six-year period or after. Not all individuals who still have their shares after the six-year period are still active. For transfers that occurred after 2018, the full period has not passed, so their inclusion in the "kept" or "sold" groups were based on the current status of the shares.*

Source: Developed by Northern Economics based on data from AKFIN (2024)

Military Leases

If there is a military mobilization or order for a QS holder to report for military service preventing them from participating in the halibut or sablefish IFQ fisheries, the Regional Administrator may approve a temporary military lease for the IFQ from the QS held by an affected QS holder. At the time of the 2016 IFQ Program Review, there were no military leases in the IFQ Program since the military lease provision was implemented in 2008. Since the 2016 report, there were three military leases.

CQE Leases

As described in Section 2.9.2.3, certain communities are eligible to form a non-profit entity (Community Quota Entity, or CQE) to purchase catcher vessel QS and lease it to individual community

residents. Leasing of QS by a CQE is an exception to the general prohibition on leasing of catcher vessel shares. A table showing the halibut and sablefish QS holdings of individuals CQEs is presented in Section 2.9.2.3. CQE holdings are presented rather than actual leases because often CQEs lease the same IFQ more than once due to the initial lessor being unsuccessful in harvesting the IFQ.

Guided Angler Fish (GAF) Transfers

The GAF program was created as part of a catch sharing plan (CSP) implemented in 2014 by NMFS for the guided sport (charter) and commercial halibut fisheries in areas 2C and 3A. The GAF program authorizes limited annual transfers (leases) of commercial halibut IFQ as GAF to qualified charter halibut permit holders for harvest by charter vessel anglers. In instances where charter management measures put size or harvest restrictions on charter anglers, qualified charter halibut permit holders can offer GAF to charter anglers as a way for the angler to retain halibut of any size, up to the limits allowed for unguided anglers.

GAF is issued by NMFS in numbers of halibut based on a conversion factor from the average weight of GAF harvested in the respective area in the previous year. The conversion factor is area-specific and expressed as pounds of IFQ per GAF. Table 37 shows the conversion factor from the beginning of the GAF program to present. Table 38 shows a summary of IFQ to GAF transfers from 2014 to 2023 by area. As seen in Table 38, in 2023 NMFS processed 600 IFQ to GAF transfers, which totaled 160,609 pounds of IFQ to 96 different charter halibut permit holders. The transfers authorized the potential harvest of up to 2,951 additional halibut as GAF. The pounds of IFQ transferred generally increased each year before experiencing a drop in the unusual 2020 season. Since 2020, the increasing trend has continued, and 2023 has the greatest number of IFQ pounds transferred by a large margin. Another topic included in Table 38 is the percentage of self-transfers, which means the same person held both the IFQ and the charter halibut permit, and they transferred the IFQ to themselves. Area 3A always has a much greater percentage of self-transfers than area 2C. In 2023, about 5% of all GAF permit transfers were self-transfers.

Table 37. GAF Annual Conversion Factors as Pounds of IFQ per GAF

	Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Conversion Factor (IFQ lb / GAF)	Area 2C	26.4	67.3	65.1	74	71	66	61	72	74	65	61
	Area 3A	12.8	38.4	36.1	42	44	42	40	57	27	23	23

Source: Iverson (2023)

Table 38. IFQ to GAF Transfers

Year	IPHC Regulatory Area	IFQ Pounds Transferred	Number of GAF Transferred	Number of GAF Permits Issued	Number of GAF Permit Holders	Weighted Avg. price per pound	Percentage of self-transfers
2014	2C	29,498	1,117	92	30	5.62	14%
	3A	11,654	910	19	13	5.01	47%
	Total	41,152	2,027	111	43	5.46	20%
2015	2C	36,934	548	119	27	5.62	7%
	3A	10,337	269	25	13	4.66	40%
	Total	47,271	817	144	40	5.48	12%
2016	2C	47,064	723	132	32	5.43	10%
	3A	10,442	289	26	11	5.46	38%
	Total	57,506	1,012	158	43	5.43	21%
2017	2C	53,206	719	207	34	5.32	7%
	3A	9,786	233	22	13	4.59	41%
	Total	62,992	952	229	47	5.27	11%
2018	2C	80,656	1222	332	46	5.17	6%
	3A	12,760	304	31	17	5.11	35%
	Total	93,416	1526	363	63	5.17	9%
2019	2C	97,680	1601	341	56	5.33	5%
	3A	13,524	338	29	13	5.28	45%
	Total	111,204	1939	370	69	5.32	8%
2020	2C	57,645	801	235	48	4.99	8%
	3A	5,240	92	15	7	4	67%
	Total	62,885	893	250	55	4.97	11%
2021	2C	97,056	1312	407	59	5.2	5%
	3A	11,913	441	24	8	5	29%
	Total	108,969	1753	431	67	5.19	7%
2022	2C	128,094	1971	459	67	6.13	3%
	3A	11,475	499	29	12	6.12	48%
	Total	139,569	2470	488	79	6.13	6%
2023	2C	143,520	2208	560	77	6.13	3%
	3A	17,089	743	40	19	4.65	33%
	Total	160,609	2951	600	96	6.03	5%

Source: Iverson (2023)

When GAF transfers involve a monetary transaction, then GAF participants must report the value of the transaction. According to the GAF Program 2023 Annual Report, lease prices in 2023 averaged $6.13/lb in Area 2C and $4.65/lb in Area 3A, excluding prices associated with self-transfers and transfers for which price information was not reported. The weighted average price per pound of IFQ leased as GAF in 2023 for both areas together was $6.03.

Table 39. Summary of GAF landings

Year	IPHC Regulatory Area	Number of GAF Transferred	Number of GAF Harvested (% of amount transferred)	Actual Net Pounds of IFQ Harvested as GAF	Average Length in Inches (range)
2014	2C	1117	800 (72%)	53,864	55 (18-77)
	3A	910	269 (30%)	10,336	45 (30-75)
	Total	2027	1,069 (53%)	64,200	
2015	2C	548	428 (78%)	27,849	53 (18-77)
	3A	269	143 (53%)	5,158	45 (31-84)
	Total	817	571 (70%)	33,007	
2016	2C	723	529 (73%)	38,968	56 (32-82)
	3A	289	220 (76%)	9,332	47 (24-74)
	Total	1012	749 (74%)	48,300	
2017	2C	719	576 (80%)	40,860	55 (18-79)
	3A	233	157 (67%)	6,920	48 (29-72)
	Total	952	733 (77%)	47,780	
2018	2C	1222	972 (80%)	64,365	54 (22-79)
	3A	304	215 (71%)	9,052	47 (25-89)
	Total	1526	1,187 (78%)	73,417	
2019	2C	1601	1,237 (77%)	75,039	53 (22-83)
	3A	338	266 (79%)	10,652	46 (25-66)
	Total	1939	1,503 (78%)	85,691	
2020	2C	801	764 (95%)	55,061	56 (23-85)
	3A	92	38 (41%)	2,147	52 (34-64)
	Total	893	802 (90%)	57,208	
2021	2C	1312	1,031 (79%)	76,529	57 (29-75)
	3A	441	128 (29%)	3,446	39 (19-65)
	Total	1753	1,159 (66%)	79,976	
2022	2C	1971	1,548 (79%)	99,962	55 (24-81)
	3A	499	277 (56%)	6,487	39 (25-70)
	Total	2470	1,825 (74%)	106,449	
2023	2C	2208	1,794 (81%)	109,952	54 (17-83)
	3A	743	364 (50%)	8,430	39 (22-76)
	Total	2951	2,158 (73%)	118,382	

Source: Iverson (2023)

Table 39 summarizes the estimated pounds of halibut that were harvested as GAF for each year the program was implemented. In 2023, charter vessel anglers harvested 2,158 GAF from the combined areas in 2023 (73% of the available GAF). The 2023 harvest was the largest since the beginning of the GAF Program, however, the year with the most GAF harvested in terms of percentage of available GAF was 2020 when 90% was harvested. Unused GAF are returned to the commercial IFQ holders,

either voluntarily in August and September, or automatically 15 days before the end of the commercial halibut season (December 7 in 2023).

Guides must electronically report the length of each GAF harvested. In 2023, the average length of GAF harvested was 54 inches in Area 2C and 39 inches in Area 3A. Throughout the duration of the GAF program, the size of GAF in Area 3A has consistently been smaller than Area 2C. According to the GAF Program 2023 Annual Report, in all years the majority of GAF harvested in area 2C is between 50 and 60 inches long, while in 3A the length of the length of GAF are smaller and more widely distributed, and the majority of fish fall between 30 and 59 inches.

2.7.3 Hired Master Use

A hired master is a person designated by the shareholder to land that shareholder's IFQ. Hired masters can be used to harvest Class A (catcher-processor) QS in both the halibut and sablefish IFQ fisheries. Additionally, the council allows initial QS recipients to use a hired master[9], with the idea being that the initial recipients would then have the flexibility to continue with the business practices they had prior to the implementation of the IFQ Program. A 2014 amendment to the program prohibited initial QS recipients from using a hired master to harvest IFQ derived from catcher vessel QS received by transfer after February 12, 2010 in any regulatory area (79 FR 43679).

2.7.3.1 Class A Hired Master Use

The 2016 IFQ Program Review discusses Class A QS holder hired master use separately from catcher vessel hired master use. At the time of the 2016 report, the use of hired masters to harvest Class A QS had increased substantially across IFQ regulatory areas in both fisheries. At the time, the areas with the largest TAC's (2C, 3A and 3B for halibut and WG and SE for sablefish) had substantial increases in hired master use. During the same time period, there was a decrease in IFQ leasing in Class A, indicating that Class A QS holders were transitioning from leasing their IFQ to using hired masters to land their IFQ. Operationally for class A QS holders and the individual harvesting the IFQ, these can be equivalent relationships. However, there is slightly less paperwork for a hired master permit than an IFQ lease.

2.7.3.2 Catcher Vessel Hired Master Use

Catcher vessel eligibility to use a hired master is tied to the shareholder and not the QS, so initial recipients could use a hired master on QS that they acquired over time. Non-individual entities must use a hired master to land their IFQ, as is necessary for a non-individual entity to operate. In the halibut Area 2C and the sablefish Southeast Outside District, the council limited hired master use to

[9] Except in halibut Area 2C and the Southeast Outside District of the sablefish fishery.

non-individual entities that received an initial QS allocation to maintain what had historically been an owner-operated fleet.

The hired master use provision has been amended several times to address loopholes in the regulations. Initially, the IFQ Program included a vessel ownership requirement for shareholders intending to use hired masters to land their IFQ. In 1999, the Council specified that shareholders must have at least a 20% ownership interest in the vessel upon which their IFQ was being fished. In 2002, an amendment to the program allowed shareholders to substitute indirect ownership of a vessel through corporate or other non-individual entity interest for all or part of direct vessel ownership requirements for using hired masters. In 2007, an amendment was passed requiring specific documentation to demonstrate the 20% vessel ownership interest. In 2014, an amendment added a 12-month minimum requirement for the minimum 20% vessel ownership interest. Another amendment in 2014 prohibited initial QS recipients from using a hired master to harvest IFQ derived from catcher vessel QS received by transfer after February 12, 2010.

Table 40 and Table 41 show the share of landings by hired skippers by regulatory area in the halibut and sablefish fisheries, respectively. The total landings represent landings by catcher vessels. According to the 2016 IFQ Program Review, hired master use increased substantially in both fisheries until 2010, but in the five years leading up to the review, it decreased slightly. From 2014 through 2024, both fisheries decreased their hired master use overall, and the sablefish fishery has more IFQ harvested by a hired master in any given year than the halibut fishery. Hired master use in the halibut catcher vessel fishery decreased from 32.6% in 2014 to 24.7% in 2023. Hired master use in the sablefish catcher vessel fleet decreased by 44.7% to 31% in the same period. From 2014 to 2023, the halibut regulatory area with the greatest hired master harvest was area 4B. From 2014 to 2024, the sablefish fishery area WY had the greatest hired master harvest. Across all regulatory areas in the halibut fishery, 24.7% of the harvest was by hired masters in 2023, which was the lowest share of harvest since 2014. In the sablefish fishery, hired masters accounted for 31% of the harvest in 2023 which was the lowest share of IFQ harvest since 2014.

Table 40. Halibut IFQ Fishery Catcher Vessel Hired Master Harvest of IFQ by Regulatory Area

Year	2C	3A	3B	4A	4B	4C/4D	All
2014	1.20%	38.30%	49.10%	43.60%	52.10%	45.10%	32.60%
2015	1.30%	36.60%	45.80%	40.30%	43.80%	40.10%	30.20%
2016	1.20%	36.80%	45.50%	41.40%	42.30%	36.50%	29.40%
2017	1.10%	35.70%	44.00%	37.60%	45.80%	41.30%	29.20%
2018	1.10%	37%	45.20%	39.80%	45.50%	38.70%	30.50%
2019	0.90%	34.40%	45.20%	38.90%	49.50%	35.80%	29.10%
2020	0.90%	32.90%	41.70%	38.80%	48.10%	30.10%	27.60%
2021	0.30%	31.20%	39%	34.80%	44.50%	29.80%	26.20%
2022	0.70%	31.30%	37.70%	34.70%	42.20%	27.50%	26.40%

2023	0.50%	30.10%	35.40%	27.30%	53.20%	26.30%	24.70%

Source: NPFMC (2024)

Table 41. Sablefish IFQ Fishery Catcher Vessel Hired Master Harvest of IFQ by Regulatory Area

Year	AI	BS	CG	SE	WG	WY	All
2014	32.50%	19.70%	64.80%	9%	56.90%	64.40%	44.70%
2015	7.80%	21.30%	64.80%	9.40%	48.90%	63.10%	43.30%
2016	4.90%	38.60%	63.40%	9%	47.70%	64.50%	42.70%
2017	6.60%	30.20%	57.10%	8%	47.70%	61.10%	39.40%
2018	7.10%	8.10%	53.00%	9%	46.10%	63.50%	37.10%
2019	4.00%	30.10%	50.10%	8.70%	47%	65.70%	36.50%
2020	7.10%	9.50%	54.30%	9.10%	41.80%	65.10%	37.50%
2021	0.70%	16.80%	45.30%	9%	41.80%	61.60%	34.70%
2022	4.70%	19.30%	46.40%	8.60%	41.00%	62.10%	34%
2023	2.60%	10.50%	45.40%	8.30%	31.10%	59.10%	31%

Source: NPFMC (2024)

2.8 New Entry Opportunities and Transferability of QS and IFQ

This section examines how the IFQ program has affected entry into both the sablefish and halibut fisheries since the previous review. The previous review states that providing entry opportunities for new participants was implicit in the objectives for the IFQ program, specifically objectives 4, 6, and 7 (maintain diversity, dominance of owner-operators, and limit concentration).

Because the Council wanted to preserve the owner-operated nature of the fisheries, the original IFQ program restricted QS ownership to initial catcher vessel QS recipients and individuals that could demonstrate at least 150 days of commercial fish harvesting experience in a U.S. commercial fishery. Such individuals needed to document their eligibility with a TEC issued by NMFS. In addition, starting in 2014, acquisition of catcher vessel QS was limited to individuals only.[10]

In addition, several other provisions were implemented to facilitate entry. A comprehensive list of these measures can be found in the previous review, but generally include the block program, the "fish down" provision, QS holding and vessel use caps, and the prohibition on using hired masters. Finally, several loan programs exist which furthermore support new entry into the fisheries. As described in Section 2.9.1, the Council has heard two discussion papers regarding access opportunities in the IFQ fisheries, but to date no actions have been taken based on the findings of those papers.

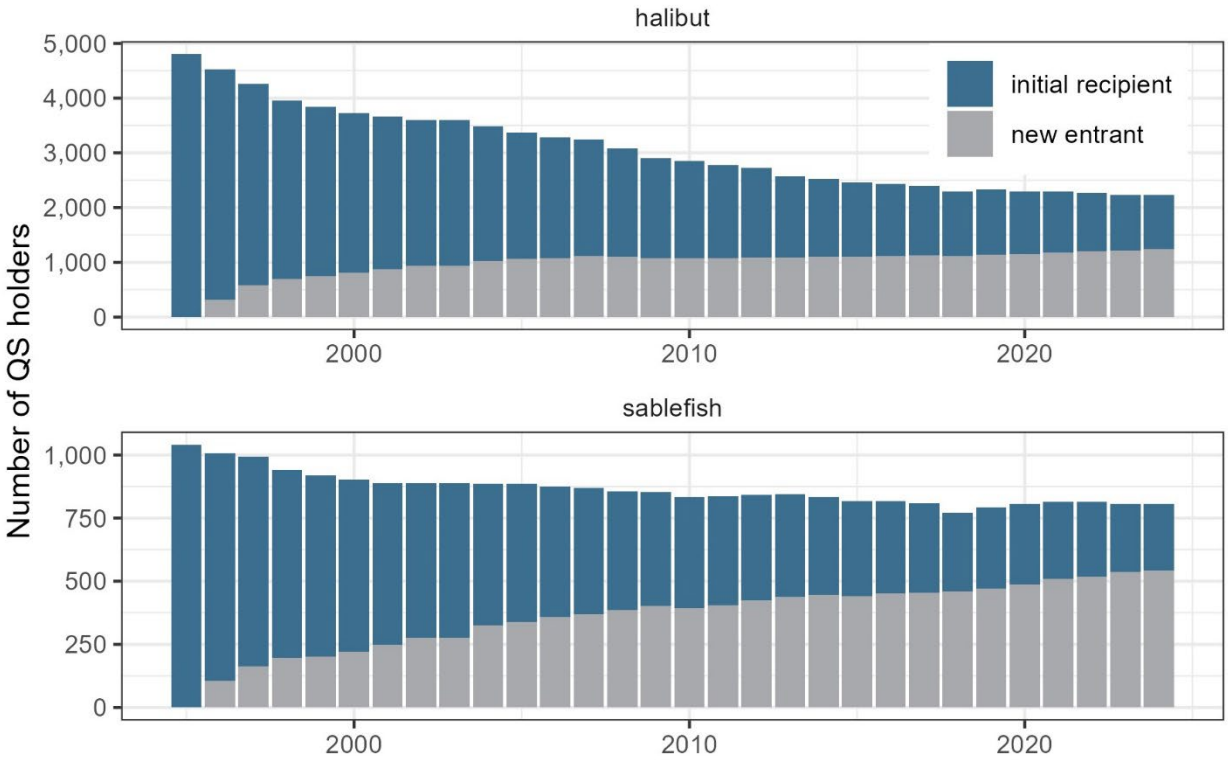
[10] Class A shares, for catcher-processors are not affected by these restrictions but must demonstrate US citizenship.

This section describes trends and factors affecting entry opportunities into the fisheries, first by summarizing trends in the number of initial recipients and QS holdings over time, followed by rates of new entry and other available data. Data on QS transfers are then presented, including rates and amounts of transfers by area, as well as information about available loan programs to assist new entrants into the fishery.

2.8.1 Trends for Initial QS Recipients and New Entrants

New entrants are individuals who acquired QS after the start of the program in 1995 and were not initial recipients of QS. While the creation of QS granted initial recipients with an asset of value, it also created an additional cost to enter and prosecute the fishery for new entrants, which has been identified as a significant barrier for new entry in LAPP programs. The number of individuals holding QS by IFQ fishery and generation is shown in Figure 80.

Figure 80. Number of QS Holders by IF Fishery and Generation



Source: Developed by Northern Economics based on data from NMFS (2024d)

In 1995, there were 4,801 initial recipients of halibut QS, in 2023, 1,023 remained (Table 42). In the sablefish IFQ fishery, of the 1,041 initial recipients 270 remained in 2023. While the total number of individuals holding QS has declined in both fisheries, the number of new entrants has increased,

particularly in the sablefish IFQ fishery, contributing to higher QS holdings by new entrants than by initial recipients.

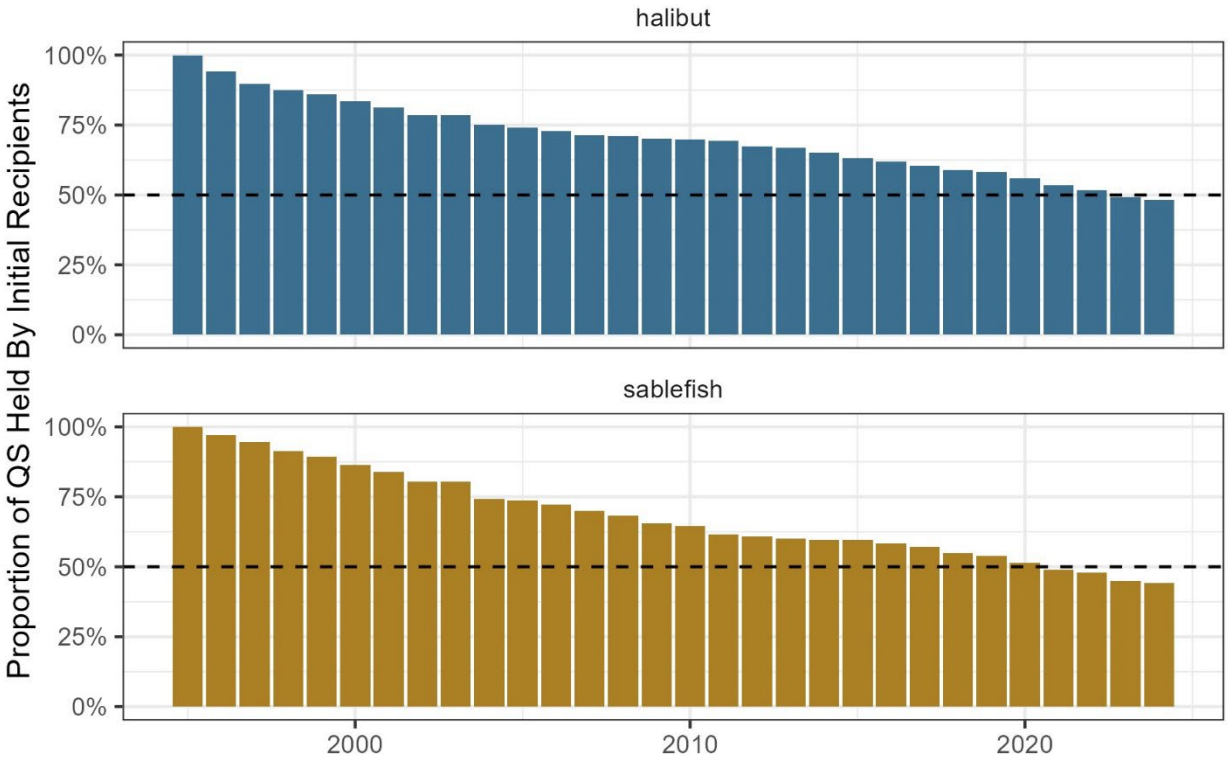
Table 42. Summary of Quota Share Holdings by Generation and IFQ Fishery

			Total QS		Quota Shares			
Species	Year	Generation		Proportion of QS (%)	Number of Individuals	Median QS	25th percentile	75th percentile
Halibut	1995	initial recipient	327,277,077	100.0%	4,801	10,976	2,212	41,201
	2005	initial recipient	245,465,346	74.0%	2,300	23,687	3,046	65,859
	2005	new entrant	86,226,804	26.0%	1,067	27,031	15,745	50,629
	2015	initial recipient	209,303,188	63.2%	1,361	36,508	11,858	73,176
	2015	new entrant	121,861,381	36.8%	1,104	32,526	18,930	58,097
	2023	initial recipient	163,533,680	49.3%	1,021	38,705	13,500	74,753
	2023	new entrant	167,972,873	50.7%	1,213	37,917	21,705	67,268
Sablefish	1995	initial recipient	308,244,314	100.0%	1,041	22,121	2,980	98,507
	2005	initial recipient	234,120,772	73.7%	546	50,488	5,598	196,142
	2005	new entrant	83,705,347	26.3%	339	55,283	27,150	121,729
	2015	initial recipient	188,247,231	59.5%	376	67,676	14,457	245,593
	2015	new entrant	128,257,060	40.5%	441	58,422	31,278	138,235
	2023	initial recipient	143,189,191	45.0%	270	74,918	22,121	267,517
	2023	new entrant	175,004,922	55.0%	537	64,060	32,617	148,113

Source: Developed by Northern Economics based on data from NMFS (2024d)

The proportion of all QS holders held by initial recipients are shown for both IFQ fisheries in Figure 81. This shows that the proportion of QS held by initial recipients in both fisheries has declined over time and dropped to less than 50% in 2023 in the halibut fishery and in 2021 in the sablefish fishery. In 2023, the proportion of QS held by new entrants was 55% in the sablefish fishery and 50.7% in the halibut fishery.

Figure 81. Proportion of QS held by Initial Recipients by Fishery



Source: Developed by Northern Economics based on data from NMFS (2024d)

Table 43 shows the QS holdings and proportion of QS held by initial recipients across management areas in 2023. Shareholdings by initial recipients across halibut management areas varied from 38.1% of shares in Area 4D to 52% of shares in Area 3B. The previous review found that in 2015, Area 2C had the lowest proportion of QS held by initial recipients and 4B and 4D had the largest. The previous review discussed how regulatory constraints in Area 2C (including more constraining individual and vessel use caps, fish down prohibitions) might contribute to higher turnover. Here, differences in the approach used to identify initial recipients as well as underlying data changes may contribute to the difference in trends.

Table 43. Summary of QS Holdings by Management Area and IFQ Fishery in 2023

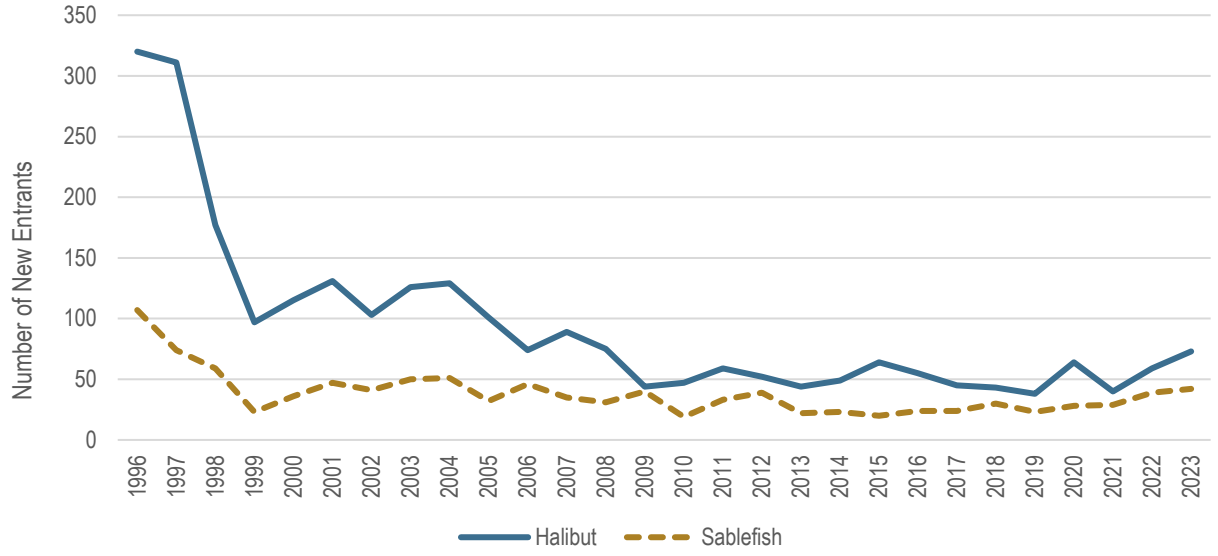
Species	Management Area	QS Held by initial recipients	QS held by new entrants	Total QS	Initial Recipient Share of Total
Halibut	2C	27,312,698	32,153,196	59,465,894	45.9%
	3A	96,175,116	88,685,087	184,860,203	52.0%
	3B	25,768,634	28,432,681	54,201,315	47.5%
	4A	6,427,779	8,156,377	14,584,156	44.1%
	4B	4,013,939	5,267,721	9,281,660	43.2%
	4C	1,809,492	2,206,860	4,016,352	45.1%
	4D	1,889,937	3,068,313	4,958,250	38.1%
Sablefish	AI	4,978,971	26,936,291	31,915,262	15.6%
	BS	4,046,314	14,712,801	18,759,115	21.6%
	CG	57,082,679	55,035,118	112,117,797	50.9%
	SE	26,996,244	39,124,232	66,120,476	40.8%
	WG	15,777,319	20,244,384	36,021,703	43.8%
	WY	34,307,664	18,952,096	53,259,760	64.4%

Source: Developed by Northern Economics based on data from NMFS (2024d)

2.8.2 Rate of New Entry

The previous review described how barriers to entering the IFQ fisheries changed over the first 20 years of the program and cited evidence from workshops with crewmembers that QS was relatively more affordable in the earlier years of the program and that some vessel owners co-signed for loans for crewmembers to buy QS. Other factors discussed included increasing regulations, state fishery conditions and regulations, and management costs (e.g., monitoring costs and safety equipment). The previous review found that rates of new entry into both fisheries had decreased since implementation of the program overall. Updated data from 2016 to 2023 largely continue the trend analyzed in the previous review (Figure 82) with an average of 52 new entrants per year in the halibut IFQ fishery and 30 new entrants per year in the sablefish IFQ fishery (Table 44). However, beginning in 2020, the number of new entrants in both fisheries began a trend of increasing rates of entry for the first time in a decade, with 2023 seeing the highest number of new entrants in both fisheries since 2008 for halibut and 2006 for sablefish, at 73 and 42 new entrants respectively (Figure 83). These changes represent 40% increases in new entry than the recent 8-year average for both fisheries.

Figure 82. Rate of Entry into the Halibut and Sablefish IFQ fisheries



Note: Rate of entry shows new entrants in the beginning of the fishing year (as opposed to the end of the fishing year, as represented in the prior review). Additionally, data from the NMFS RAM Division showed no new entrants in 2002 for either fishery. Because data in the adjacent years was twice as high as in the previous review, it is assumed that new entrants may have been misappropriated to the year of entry and these have been corrected for in the above analysis. New entrants have been distributed based on Figure 2.6-3 in the previous review.

Source: Developed by Northern Economics based on data from NMFS (2024d)

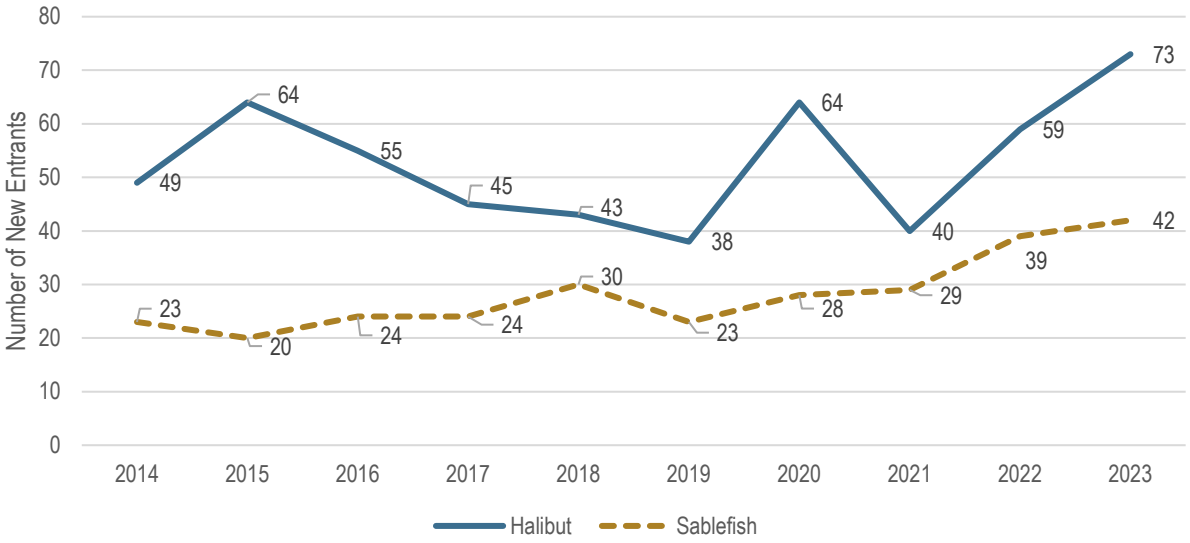
Table 44. Recent Number of New Entrants by Fishery

	Number of New Entrants	
Year	Halibut	Sablefish
2011	59	33
2012	52	39
2013	44	22
2014	49	23
2015	64	20
2016	55	24
2017	45	24
2018	43	30
2019	38	23
2020	64	28
2021	40	29
2022	59	39
2023	73	42
2011-2015 Average	**53.6**	**27.4**
2016-2023 Average	**52.1**	**29.9**

Note: Rate of entry shows new entrants in the beginning of the fishing year (as opposed to the end of the fishing year, as represented in the prior review).

Source: Developed by Northern Economics based on data from NMFS (2024d)

Figure 83. Rate of New Entry into the Halibut and Sablefish IFQ Fisheries



Note: Rate of entry shows new entrants in the beginning of the fishing year (as opposed to the end of the fishing year, as represented in the prior review).

Source: Developed by Northern Economics based on data from NMFS (2024d)

2.8.3 Average Holdings of New Entrants

As discussed in the previous sections, the total shareholdings of initial recipients and new entrants have changed over time, with new entrants now holding between 50 and 55% of all QS in both fisheries. However, the amount of QS held by individual new entrants matters for understanding the ability of new entrants to diversify their portfolios, since it may be more difficult to acquire large amounts of QS and/or be substantially engaged in the fishery. The previous review discussed how new entrants may not be financially able to afford to purchase large quantities of QS and how QS may be an important bargaining tool for crewmembers, if they are able to contribute to the IFQ holdings on their vessels.

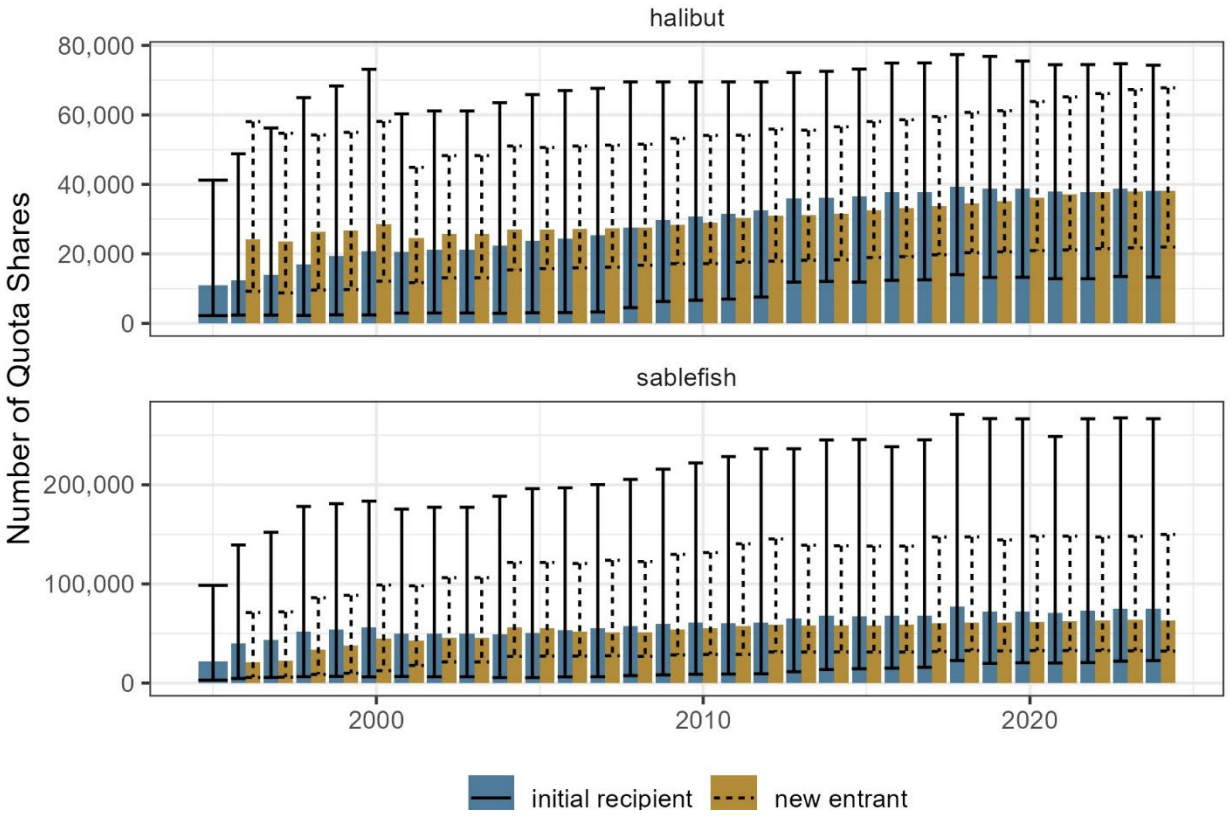
Figure 84 shows median QS holdings for new entrants and initial recipients over time. Error bars represent the interquartile range[11] which describes the distribution of QS holdings around the median (which here represents the average, or typical shareholdings). The median and interquartile range is used to describe typical outcomes because the distribution of QS holdings across individuals

[11] The interquartile range describes where the middle 50% of the data lies. The lower end (25th percentile) is the point where 25% of individuals had QS holdings below that amount, while the upper end (75th percentile) is the point where 25% of individuals had QS holdings above that amount. The median represents the point where 50% of individuals had QS holdings greater than or less than that amount.

is highly skewed in all years, with many QS holders holding very small amounts of QS and a few holding large quantities of QS.

The upper limit of the error bars for the halibut fishery IFQ illustrate that in almost all years, the initial recipients at the upper end of the distribution held more QS than new entrants, but in recent years this gap has decreased. The difference in the median amount of QS held by both new entrants and initial recipients has varied over time. In the early years of the program, the median new entrant held more QS than the median initial recipient, because at that time many initial recipients held very small amounts of QS. Since 2009, the median initial recipient has held more QS than the median new entrant, but that difference has decreased as both the median QS holdings of new entrants has increased over time and the median QS holdings of initial recipients has declined. At the lower end of QS holdings, the lower 25% of initial recipients has increased over time, signaling that few initial recipients with small amounts of quota exist in the fishery, and thus have either exited or acquired additional QS.

Figure 84. Average QS Holdings by Fishery and Generation



Source: Developed by Northern Economics based on data from NMFS (2024d)

In contrast to the halibut fishery, the sablefish fishery has seen smaller changes in average QS holdings by new entrants over time and larger changes in the distribution of holdings by initial

recipients. In particular, the top 25% of initial recipients has increased over time, from around 150,000 QS units in 1997 to over 250,000 QS units in 2021. Similar to the halibut fishery, differences in median QS holdings between generations are smaller, and in almost ever year since the program began, the median new entrant has held more QS than the median initial recipient. Again, the lower end of the distribution indicates that more initial recipients hold smaller amounts of QS as opposed to new entrants, contributing to narrower distributions overall.

2.8.4 New Entrant Holdings by Vessel Class

Table 45 shows the proportion of QS held by new entrants in 2005, 2015, and 2023. For halibut, class A QS holders have the highest proportion of QS held by new entrants, which have increased from 43% of QS in 2005 to 62% in 2023. Class D is close behind at 58% in 2023. Class C and B each had 52% and 46% in 2023, indicating that across all classes the proportion of QS held largely matches the trend for the fishery.

For sablefish, Class A QS holders have the highest proportion of QS held by new entrants and have increased from 34% of QS holdings in 2005 to 67% in 2023. Class C QS holders have approximately 57% of QS held by new entrants while initial recipients of Class B QS still hold the majority of shares, at 47% of shares held by new entrants in 2023.

Table 45. QS Holdings by Initial Recipients by Vessel Class and IFQ Fishery

		QS Class			
Species	Year	A	B	C	D
Halibut	2005	43%	20%	27%	39%
	2015	56%	30%	39%	49%
	2023	62%	46%	52%	58%
Sablefish	2005	34%	24%	24%	NA
	2015	66%	31%	37%	NA
	2023	67%	47%	57%	NA

Note: Values have been rounded to the nearest percent.

Source: Developed by Northern Economics based on data from NMFS (2024d)

2.8.5 QS Prices and Transfers

Because individual fishing quota programs work to reduce overcapitalization and increase efficiency, this can work to increase the value of QS, which while this is a benefit for initial recipients and QS holders, this value increases the cost of entry into the fishery. As discussed in the previous review, the most frequently cited barriers to entry for second-generation shareholders are the costs of QS and the access to capital needed to buy them.

In this section, trends are presented for the average reported prices for QS for both the halibut and sablefish IFQ fisheries overall and by management area as well as the types of QS transfers over time. Average QS prices provide information about the cost of entry into the fisheries over time while the number and types of transfers provide information about how QS moves across participants, notably in priced or unpriced transactions (e.g., gifts). This section uses data collected through QS transfer applications approved by NMFS-RAM. Those involved in the transfer or lease of QS are required to complete and submit a transfer application which are reviewed and approved by NMFS-RAM. Applications collect information about both transferors and recipients and includes information about self-reported prices, reasons for transfer, and financing mechanisms, among other information.

2.8.5.1 Average QS price

Table 46 and Table 47 present average reported QS prices for the halibut and sablefish fisheries, respectively, for all transactions that reported a cash price. For halibut, the average reported QS price between 2000 and 2016 generally increased from around $11 per pound to $20-$30 per pound, peaking in 2016 at $56/pound, signaling high expectations about profitability and future profitability. Since 2016, average QS have fluctuated, but on average, QS prices between 2016 and 2018 were similar to the 10 years prior, at $26.38 per pound. Notably, in 2020 and 2021, QS prices dropped from an average of $22 per pound in 2019 to $14.27 in 2020 and $15.51 in 2021. In 2022 and 2023 average QS prices rebounded to exceed the recent 7-year average, at approximately $27 per pound. In 2021, the number of priced QS transactions more than doubled from the year before from 310 transactions in 2020 to 640 in 2021. The number of transactions continued to be relatively high in both 2022 and 2023, at 677 and 658, respectively, the highest number of priced transactions since 2000. These changes also resulted in the number of people selling or buying QS to change as well. Since 2008, the number of people selling QS has been less than 200 in any given year, however in 2021, the number of unique individuals selling QS increased to 306 and in 2021, 263 people sold QS. The number of buyers of QS is generally smaller than the number of sellers, but also increased from 162 in 2019 and 110 in 2020 to 240 in 2021.

Table 46. Average Halibut QS Prices and Number of Priced Transactions

Year	Average QS Price Per Pound ($2023/lb)	Number of Transactions	Number of People Selling	Number of People Buying
2000	10.97	472	335	312
2001	13.22	477	328	307
2002	11.58	390	284	276
2003	13.90	460	335	301
2004	17.56	434	330	271
2005	18.70	365	267	242
2006	22.51	370	258	238
2007	17.58	463	325	233
2008	27.45	413	281	211
2009	22.85	206	141	131
2010	22.82	265	192	171
2011	29.23	247	170	142
2012	26.54	175	132	110
2013	32.00	142	107	104
2014	16.01	217	153	153
2015	35.76	202	144	125
2016	56.47	171	133	123
2017	25.29	212	159	139
2018	23.59	315	134	116
2019	22.25	447	174	162
2020	14.27	310	123	110
2021	15.51	642	306	240
2022	26.95	677	263	221
2023	26.70	658	185	164
2000-2005 Average	**14.32**	**433.00**	**313.17**	**284.83**
2006-2015 Average	**25.27**	**270.00**	**190.30**	**161.80**
2016-2023 Average	**26.38**	**429.00**	**184.63**	**159.38**

Note: Data prior to 2000 were not available. Data represent weighted means of all reported priced transactions (excluding trades, gifts or unpriced transactions) and have been adjusted for inflation and are shown in terms of real 2023 dollars.

Source: Developed by Northern Economics based on data from AKFIN (2024)

For sablefish, average QS prices have also generally increased over time, but not as much as halibut QS prices (Table 47). Similar to halibut, average QS prices also declined 2020-2021 and the number of transactions increased 2021-2022, though not to the record-breaking levels as observed for halibut. Between 2016 and 2023, the average QS price per pound was $13.28, and in 2020 and 2021 the average QS price was $5.44 and $4.67 per pound, respectively. QS prices rebounded in 2022 and 2023 to around $10 per pound. In addition, the number of people selling QS increased from 35 in 2019 and 33 in 2020 to 99 in 2021, with 90 different individuals purchasing QS in the same year.

Table 47. Average Sablefish QS Prices and Number of Priced Transactions

Year	Average QS Price Per Pound ($2023/lb)	Number of Transactions	Number of People Selling	Number of People Buying
2000	11.76	238	128	117
2001	8.92	168	90	94
2002	9.97	167	93	93
2003	10.13	246	145	152
2004	8.70	141	84	92
2005	9.90	193	121	114
2006	11.39	151	84	96
2007	9.21	182	100	98
2008	10.42	157	93	94
2009	10.74	108	69	71
2010	11.46	115	69	77
2011	18.76	125	79	87
2012	16.98	102	53	67
2013	12.08	60	42	41
2014	5.72	74	59	52
2015	20.58	69	50	47
2016	26.17	81	58	53
2017	14.42	96	70	66
2018	16.96	60	43	48
2019	17.80	58	35	39
2020	5.44	43	33	33
2021	4.67	179	99	90
2022	10.34	142	94	89
2023	10.42	41	35	32
2000-2005 Average	**9.90**	**192.17**	**110.17**	**110.33**
2006-2015 Average	**12.73**	**114.30**	**69.80**	**73.00**
2016-2023 Average	**13.28**	**87.50**	**58.38**	**56.25**

Note: data prior to 2000 were not available. Data represent weighted means and have been adjusted for inflation and are shown in terms of real 2023 dollars.

Source: Developed by Northern Economics based on data from AKFIN (2024)

Recent average QS prices by management area for sablefish and halibut are shown in Table 48 and Table 49, respectively. For sablefish, trends by management area generally are consistent with overall trends, with QS prices decreasing year over year across most management areas in 2020. The greatest decreases were in the WG and WY areas, where shares decreased from $14.65 to $1.22 and from $34.53 to $14.29. In 2021, share prices across most areas continued to be relatively low, with share prices in the BS, CG, SE, and WY decreasing year over year from the average 2020 QS price. In 2022 and 2023, QS prices remained below the 7-year average.

Table 48. Sablefish Average QS Prices ($/lb) by Management Area

	Management Area					
Year	AI	BS	CG	SE	WG	WY
2016	1.53	C	26.47	31.92	15.70	34.60
2017	C	0.51	20.56	15.51	8.35	6.00
2018	3.49	C	14.12	38.28	22.23	38.67
2019	C	C	19.85	13.01	14.65	34.53
2020	NA	4.68	12.07	10.43	1.22	14.29
2021	3.98	1.38	8.64	3.78	5.20	11.84
2022	2.10	2.97	11.74	13.44	7.50	13.75
2023	NA	NA	9.68	13.15	C	7.23
2016-2023 Average	**2.78**	**2.39**	**15.75**	**18.70**	**11.29**	**21.11**

Note: Values represent average price per pound. All values have been adjusted for inflation and are shown in terms of real 2023 dollars. Values represent weighted means. Cells marked with a "C" indicate values have been restricted due to confidentiality restrictions. Values marked "NA" indicate no transactions occurred in that management area in that year.

Source: Developed by Northern Economics based on data from AKFIN (2024)

Recent QS prices for halibut across management areas show similar trends as the fishery overall and for sablefish, with QS prices generally decreasing from a high in 2016 to a low in 2020 and rebounding by 2023 (Table 49). Area 3A QS have been the most valuable, at an average of $35.40 over the last 7 years, while area 4D have been the least valuable at $6.71.

Table 49. Halibut Average QS Prices ($/lb) by Management Area

	Management Area						
Year	2C	3A	3B	4A	4B	4C	4D
2016	64.42	65.89	53.30	28.12	15.21	C	NA
2017	37.31	24.91	21.28	11.82	C	C	C
2018	16.43	28.09	35.56	28.93	C	NA	NA
2019	14.60	46.82	25.16	20.05	C	NA	C
2020	7.65	17.27	28.33	3.95	C	C	4.34
2021	13.96	20.32	22.13	8.51	C	4.88	9.07
2022	16.28	43.53	33.12	10.42	C	15.13	C
2023	23.68	36.38	26.78	10.74	NA	NA	NA
2016-2023 Average	**24.29**	**35.40**	**30.71**	**15.32**	**15.21**	**10.01**	**6.71**

Note: Values represent average price per pound. All values have been adjusted for inflation and are shown in terms of real 2023 dollars. Values represent weighted means. Cells marked with a "C" indicate values have been restricted due to confidentiality restrictions. Values marked "NA" indicate no transactions occurred in that management area in that year.

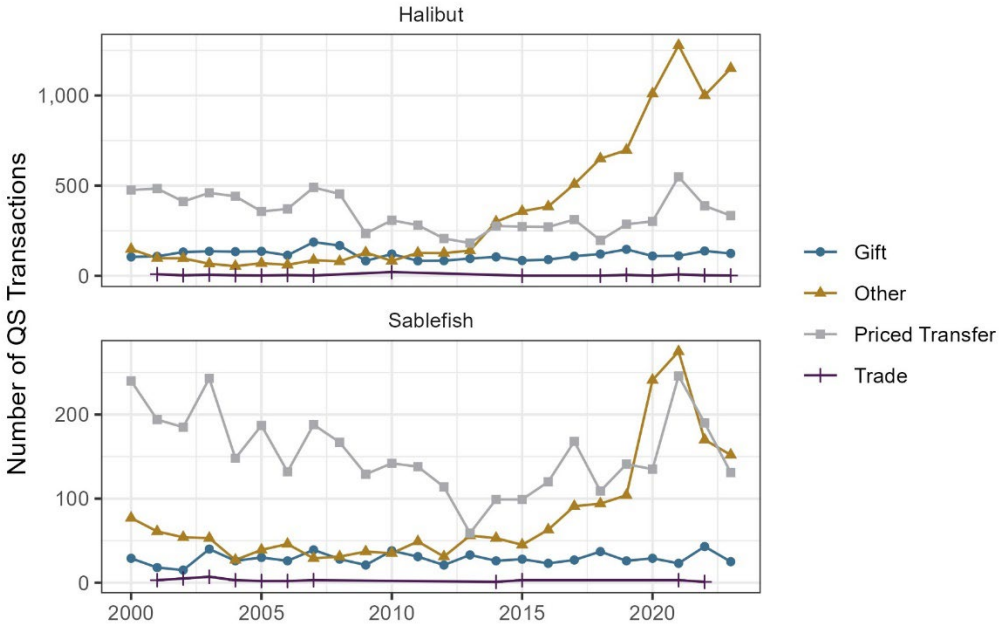
Source: Developed by Northern Economics based on data from AKFIN (2024)

2.8.5.2 Types of QS transfers

Figure 85 and Figure 86 show the number and proportion of QS transfers by type, based on transfer application information submitted to NMFS-RAM. Four main types of transfers are shown, priced

transfers (which are summarized in the previous subsection), gifts, trades, and "other" transfers. "Other" transfers include medical and beneficiary transfers as well as other unpriced permanent transfers and leases, like-kind exchanges, and self-sweeps. In addition, other common transfers also include transfers where the description of the financing provided was "split fishing proceeds" or "% of catch".

Figure 85. Number of QS Transfers by Type



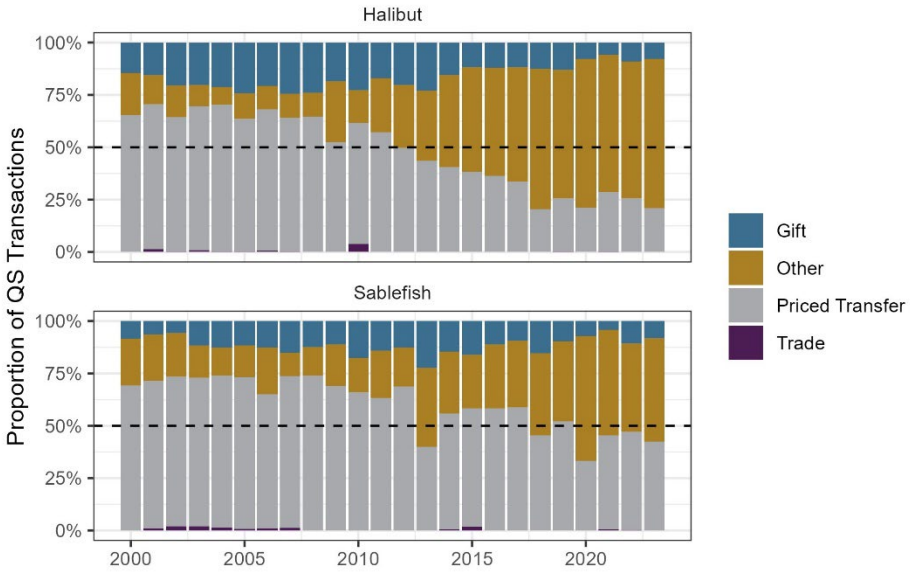
Note: Data prior to 2000 were not available

Source: Developed by Northern Economics based on data from AKFIN (2024)

For the halibut fishery, until 2014 priced QS transfers accounted for the majority of transactions, but since then, "other" types of transfers have increased, with particularly large increases since 2020. As discussed in Section 2.7.2, emergency actions during the pandemic may have increased the use of medical and beneficiary leases. However, these only explain part of the longer-term increasing trend of the use of these other non-priced transfers. In 2022 and 2023, "other" transfers were still relatively at around 1,000 transactions per year.

For the sablefish fishery, QS transfer trends show a similar trend as halibut, with the exception that price transfers generally outnumbered "other" transfers until 2020. While the number of priced and "other" transactions increased in 2020 and 2021, the number of both types of transactions has declined in recent years.

Figure 86. Proportion of QS Transfers by Type



Note: Data prior to 2000 were not available

Source: Developed by Northern Economics based on data from AKFIN (2024)

2.8.6 Loan Programs

The previous review described three available loan programs for participants and new entrants to finance the purchase of halibut or sablefish QS. These programs include the NMFS Fisheries Finance program, the Alaska Department of Commerce, Community, and Economic Development (DCCED) Commercial Fishing Loan Program, and Alaska Commercial Fishing and Agriculture Bank Loans. Detailed descriptions of each loan program, requirements, and trends between 1995-2015 can be found in NPFMC and NMFS (2016). This section focuses on updating trends through 2023 and changes since the previous review in the number of loans issued in each program. Because data on loan activity were not available or presented in the 2016 review for the Alaska Commercial Fishing and Agriculture Bank Loans, this section is omitted. A description of that program can be found in the previous review.

2.8.6.1 NMFS Fisheries Finance Program

For the IFQ fisheries, the Fisheries Finance Program (FFP) provides entry level participants and participants fishing from small vessels (Class B, C, or D) the opportunity to receive a loan to purchase halibut or sablefish QS or to refinance existing QS debt within the halibut and sablefish fisheries. The previous review provided a description of the FFP and the loan eligibility requirements. In brief, loans may be only provided to active captains or crew with at least 150 days of commercial fish harvesting experience in a U.S. commercial fishery, and applicants must provide a 20% down payment.

The total number of loans for purchasing either halibut or sablefish QS issued under the FFP has declined over time. As discussed in the previous review, the number of annual loans has decreased from 50 in the late 90s to fewer than 10 a year between 2012 and 2014 (NPFMC and NMFS 2016). These trends have largely continued, with the exception of 2020, where 23 loans were issued. In that year, approximately $6.9 million was provided in loans, compared with $2.7 million in 2019 and $3.5 million in 2021 (Table 50, Figure 87).

Between 2016 and 2023, the majority of FFP loans have been provided to Alaska state residents, at 72 total loans. 10 loans were provided to Washington state residents, while 19 loans were provided to residents of other states (Table 51). Overall, this represents an increase in the proportion of loans provided to Alaska residents (71.2% of loans) from the 1998-2015 period (57.9% of loans).

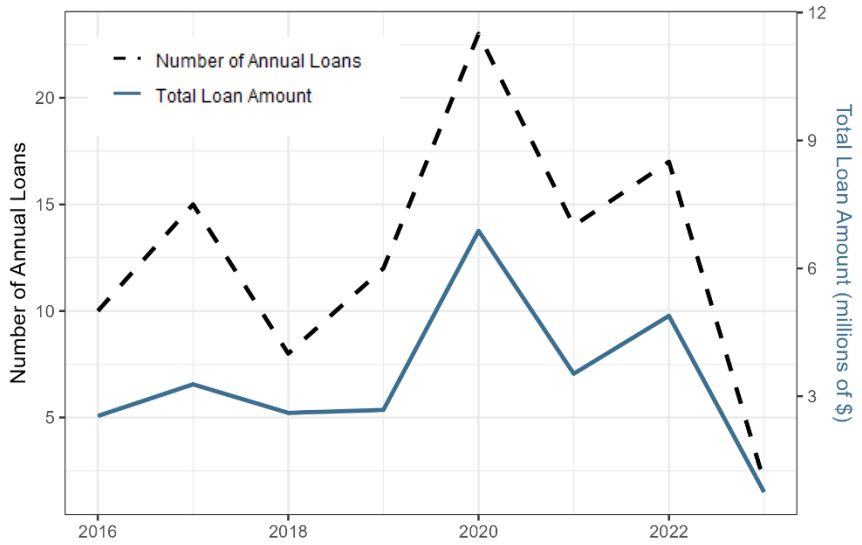
Table 50. Recent Fisheries Finance Program Loan Activity

Year	Number of Annual Loans	Total Loan Amount ($)	Average Loan Amount ($)
2016	10	2,537,000	253,700
2017	15	3,279,226	218,615
2018	8	2,610,000	326,250
2019	12	2,678,500	223,208
2020	23	6,880,372	299,147
2021	14	3,528,375	252,027
2022	17	4,886,045	287,414
2023	2	750,000	375,000

Note: Number of loans represents the number of loans to purchase halibut and/or sablefish QS. Numbers have not been adjusted for inflation.

Source: Houghtaling (2024)

Figure 87. Recent Fisheries Finance Program Loan Activity



Note: Number of loans represents the number of loans to purchase halibut and/or sablefish QS, numbers have not been adjusted for inflation.

Source Houghtaling (2024)

Table 51. Fisheries Finance Program Loans by State of Residence

State	Number of Loans	Total Loan Amount	Average Loan Amount
Alaska	72	18,956,818	263,289
Other States	19	5,411,700	284,826
Washington	10	2,781,000	278,100

Note: Number of loans represents the number of loans to purchase halibut and/or sablefish QS and Includes total number of loans issued between 2016 and 2023, numbers have not been adjusted for inflation.

Source: Houghtaling (2024)

2.8.6.2 Alaska Department of Commerce, Community, and Economic Development Commercial Fishing Loans

The State of Alaska also has a commercial fishing loan program managed by the Department of Commerce, Community, and Economic Development (DCCED). The goal of the program is to "provide long-term, low interest loans to promote the development of predominantly Alaska resident fisheries, and continued maintenance of commercial fishing vessels and gear for the purpose of improving the quality of Alaska seafood products." More information about the history and requirements for borrowers is provided in the previous review.

The previous review found that the number and total amount of loans provided under this loan program had fluctuated over time, with roughly between 5 and 25 loans issued per year between

1995 and 2015, with between less than $100,000 and $4 million provided annually in loans. Between 2010 and 2015, the number of loans and amount provided in loans had trended lower, at approximately between 5 and 15 loans per year and totaling between $500,000 and $2 million (NPFMC and NMFS 2016).

Since 2016, the number of annual loans have declined from 16 loans issued in 2016 to 4 in 2022 and 2023 (Figure 88). Since 2019, the average loan amount has also decreased from $185,500 in 2019 to $81,900 in 2023 Table 52.

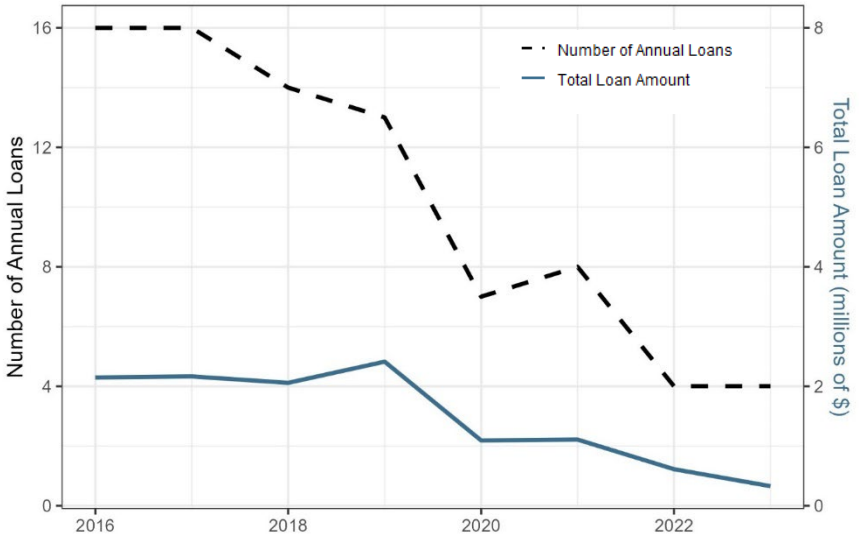
Table 52. Recent DCCED Commercial Fishing Loan Activity

Year	Number of Loans	Total Loan Amount ($)	Average Loan Amount ($)
2016	16	2,147,246	134,203
2017	16	2,164,677	135,292
2018	14	2,057,430	146,959
2019	13	2,411,724	185,517
2020	7	1,092,991	156,142
2021	8	1,107,360	138,420
2022	4	611,560	152,890
2023	4	327,600	81,900

Note: Number of loans represents the number of loans to purchase halibut and/or sablefish QS, numbers have not been adjusted for inflation.

Source: Fink (2024)

Figure 88. Recent DCCED Commercial Fishing Loan Activity



Note: Number of loans represents the number of loans to purchase halibut and/or sablefish QS. Numbers have not been adjusted for inflation.

Source: Fink (2024)

2.9 Community Impacts

This section addresses the following objectives of the final EIS for the IFQ Program:

- Objective 1: Address the problems that have occurred with the current management regime—economic stability in the fisheries and communities.
- Objective 8: Limit the adjustment cost to current participants including Alaskan coastal communities.

As in the 2016 IFQ Program Review, the current review does not address Objective 9: Increase the ability of rural coastal communities adjacent to the Bering Sea and Aleutian Islands to share in the wealth generated by the IFQ Program. The previous review noted that this objective relates to the implementation of the CDQ Program, and because the CDQ Program is a separate management program, it is not examined as part of the IFQ Program.[12]

The 2016 IFQ Program Review notes that in developing the Program, the Council was concerned with the potential impacts of the Program on coastal communities. Communities have historically been principally involved in the fixed-gear halibut and sablefish fisheries as ports of landing, the location of processing plants, and the center of a multitude of secondary service providers for harvesters and processors. Additionally, communities are involved as the place of residence of those directly involved in the fisheries. At the time of Program implementation, the Council was particularly concerned about the impacts on halibut and sablefish landings at various coastal communities adjacent to the fishing grounds and on Alaska rural resident participation in the fisheries.

In the initial IFQ Program the Council included several provisions in order to address concerns about the potential redistribution of benefits from the fixed gear halibut and sablefish fisheries amongst communities:

- The initial QS allocation criteria
- Restrictions on the amount of QS or IFQ a person can control or use
- Restrictions on who can acquire and use catcher vessel QS and IFQ
- Restrictions on leasing of catcher vessel IFQ
- Restrictions on the use of hired masters for the harvest of catcher vessel IFQ
- Vessel class use restrictions
- Restrictions on the amount of IFQ that can be used on each vessel

[12] The 2016 IFQ Program Review states that the objective "rural coastal community development of a small boat fleet" also largely relates to the CDQ Program; specifically, the allocations of halibut and sablefish to the CDQ Program at the time of IFQ Program implementation. However, the current review examined changes in the vessel size composition of the fleets in the IFQ fisheries (Section 2.4.5). In addition, changes in IFQ landings and QS holdings in small, rural Alaska communities are examined in this section.

- No restrictions on where halibut and sablefish IFQ can be landed or requirements for delivery to specific processors
- No restrictions on where halibut and sablefish can be landed within Alaska

The assessment of community impacts in the current IFQ Program review follows the same general format of the 2016 IFQ Program Review. Changes in QS holdings and IFQ landings are first examined at the aggregated regional and state levels. Next, the differential effects of the IFQ Program across communities are assessed with respect to both QS holdings of residents and, where data confidentiality restrictions allow, IFQ landings. Time-series data are presented across identified categories of communities, including the 1) top communities in terms of halibut and sablefish landings and 2) communities eligible to establish an entity to purchase, hold, and lease halibut and/or sablefish QS under the CQE Program, implemented in 2004.

This review differs from the 2016 IFQ Program Review by including an examination of potential equity and environmental justice concerns in the IFQ Program. Specifically, the current review examines if the percent changes in QS holdings experienced by residents of Alaska communities with federally recognized Alaska Native tribes and by residents of Alaska communities with concentrations of minority and/low-income populations differ from the percent changes experienced by residents across all Alaska communities participating in the IFQ fisheries. In addition, the current review provides detailed profiles of the Alaska communities with residents that participate in the harvesting sector of the IFQ fisheries. These profiles describe current engagement in the fisheries and contain information on the political, demographic and economic characteristics of the communities. The full set of community profiles is provided in Appendix 1.

A description of the anticipated community impacts from changes in ports of landing and changes in QS holdings, as outlined in the final EIS for the IFQ Program, is provided in the 2016 IFQ Program Review and is not repeated in the current review.

Data

This section utilizes data on IFQ landings by port of landing provided by AKFIN. Also used were data on QS allocations obtained from the NMFS Alaska Region web page summarizing Permits and Licenses Issued in Alaska (NMFS 2024d).

As in the previous review, confidentiality restrictions preclude reporting volumes of landings of sablefish and halibut for most communities as well as the number of entities that are actively engaged in the buying and processing sablefish and halibut by community.[13] QS holdings data, however, are not constrained by confidentiality restrictions, and are reported here at the community level.

[13] The requirement to protect the confidentiality of processors means that landings and buyer/processor number data for communities that have fewer than three buyers/processors of sablefish and/or halibut cannot be released.

The data sources and methodology for the community profiles are described separately in that document.

2.9.1 Update of Research on Community Impacts from IFQ Program Implementation

An analysis by Szymkowiak et al. (2019) updated and extended the Carothers et al. (2010) study. Utilizing records of permanent halibut QS transfers by individual QS holders with Alaska residency from 1995 to 2016, the authors developed an econometric model of QS transfer decisions that included several community-level variables of interest while controlling for individual-level attributes (e.g., age of seller, IFQ holdings, initial IFQ allocation, and whether the individual has diversified QS holdings across multiple halibut regulatory areas or vessel classes) and QS-level attributes that could affect transfer decisions. The analysis found that community-level attributes are important predictors of QS transfers even when controlling for various individual and QS-level attributes, but the most important predictors of transfer behavior are different from the ones previously examined by researchers and the NPFMC. In particular, access to an airport with a runway length greater than 4,500 ft. and the presence of a halibut buyer were important, both of which facilitate access to markets. The specified runway size was identified by the Alaska Department of Transportation as the length needed for a small-to medium-sized cargo plane to move fresh halibut out of communities. The authors note that the negative effect of the presence of a fish buyer in the community on the probability of selling may be related to not only the importance of having a relatively accessible buyer (given that vessels can land their fish in other communities), but of broader fisheries diversification opportunities, and the less tangible effects of having a viable/functional fishing culture in the community.

Consistent with earlier analyses, Szymkowiak et al. found that residents of the smallest communities in Alaska (those with fewer than 1,500 people) have a higher probability of selling QS; whereas residents of communities with 2,500 to 7,500 people have a lower probability. With respect to individual-level variables, the model indicated a positive relationship between initial QS recipient status as well as the amount and diversity of their QS holdings and the probability of selling, but a negative effect from the amount of initially allocated IFQ. Age had a significant positive effect on the probability of selling, with the effect increasing as individuals get older.

Szymkowiak et al. further noted that inter-area differences in the probability of selling may be driven by various interests including localized concerns over trawl fleet bycatch impacts on long-term halibut abundance or size-at-age, differences in location of landings, consolidation incentives associated with differentiated regulations and opportunity costs, inter-annual variation in TAC changes, and other factors that were beyond the scope of their analysis. In a concluding statement the authors note that their analysis highlights the importance of understanding the multiple components of vulnerability for rural fishing communities, and they suggest that fishery

management would benefit from tracking a variety of community-level attributes over time in order to better understand IFQ Program impacts and access for new participants.

Ringer et al. (2018) employed a mixed-methods ethnographic approach that included semi-structured interviews conducted in Kodiak, Old Harbor, and Ouzinkie to describe the generational and community-level impacts of lost access to various federal fisheries, including halibut, sablefish, and crab. Among the interviewees were crew, hired skippers, owner-operators, and owners of fishing rights who do not or no longer fish. Study results suggest that the overall decline of Alaskan youth becoming owner-operators of fishing businesses poses challenges for the sustainability of cultural fishing traditions and economies. The authors further note that the privatization paradigm of fisheries access rights has acted as a major catalyst of change that has created or amplified these barriers, transformed fishing career and livelihood opportunities compared to decades past, and generated new inequities and lasting social conflict.

Sutherland and Edwards (2022) examined the effects of the IFQ Program using a two-way fixed effect difference-in-difference model with the community as the unit of analysis. A city-level panel was constructed from 1990 to 2000 of taxable revenue, population, vessel owner characteristics, and QS allocations to assess the differential effect on rural communities and their residents. The authors focused their work on the six-year period after Program implementation, which limited the potential for other changes to affect the results. The study found that affected remote communities saw a 5%–13% decrease in population, and declines in taxable sales revenue of 15%–19%. Communities predominantly receiving the two most protected types of QS—CDQ and Class D shares—saw less vessel consolidation. However, there was only limited evidence that these communities saw commensurate protection from population declines and taxable revenue losses. The authors conclude that other restricted quota classes did not limit consolidation or population and revenue declines, indicating that these measures failed to meet the Program's social objectives.

Steinkruger and Szymkowiak (2023) matched individuals across annual halibut QS holder data and annualized harvest and processing data from 1991 through 2019, enabling a detailed examination of entrants and non-entrants—those who acquired or did not acquire halibut QS over the time series. The authors compare fisheries portfolios in terms of participation and earnings through duration, dissimilarity, and network analyses. Study results indicate that for both groups, cohorts of participants shrink and real individual earnings increase over the time series. However, entrants' cohorts have decreased further relative to historical participation, while entrants' real earnings and fisheries portfolio compositions have diverged from those of non-entrants. The authors note that in the halibut fishery, since IFQ Program implementation, gains in economic efficiency, shifts from frozen to fresh products, and other improvements in product handling have led to increased earnings expectations reflected in QS price increases on the order of 500% in some IFQ areas. The high cost of halibut QS has since become a crucial barrier to prospective entrants, especially small-scale operations with few options for portfolio diversification. The authors conclude that the study results reveal broad differences in Alaska fisheries participants' access to a critical fishery, underscoring the

role of LAPPs in shaping fishing communities' opportunities and resilience in the face of social and environmental change. The authors note that strategies to facilitate participation by small and remote communities have found limited success in terms of impacts on new entrants numbers.

In 2018, in response to community access and entry opportunity challenges identified in the 2016 IFQ Program Review and related public testimony, the Council requested a discussion paper to review Norway's recruitment quota program and similar global examples of programs that facilitate access opportunities for rural communities and new entrants within limited access fisheries and how these programs may apply to the Pacific Halibut and Sablefish IFQ Program. In response, Henry et al. (2019) reviewed various programs and examined the challenges and benefits of applying these programs in the NPFMC region. Their discussion paper provided a preliminary assessment of legal requirements that would need to be addressed, and it noted that it is important to keep in mind that in a fully-allocated fishery creating access opportunities for some has the potential to limit access for others.

An expanded discussion paper prepared by Henry (2021) identified considerations related to the creation of an access pool of halibut and sablefish QS that facilitates entry level opportunities. The paper suggested two ways of creating an Access Pool: 1) Under a transfer deduction, 1% or 0.5% from each permanent QS transfer would be deposited in the access pool until 1% of the total 2019 QS is accumulated; or 2) new QS units would be created to fund the access pool based on 1% of the total 2019 QS. The paper noted that a newly formed regional organization could receive the allocation and determine the distribution to applicants based on criteria established by the entity and approved by the Council. After reviewing the discussion paper, the IFQ Committee recommended that 1) any future work include specific discussion of the impacts of an Access Pool on existing QS holders who have mortgaged their quota; 2) Council staff continue to seek information on results from Norway's recruitment quota program; and 3) if this action moves forward, the access pool should be funded by newly created QS units, as this implementation would be more expedient and less complex than a deduction on QS transfers.

2.9.2 Geographic Changes in Halibut and Sablefish IFQ Landings and QS Holdings

In this section changes in QS holdings and IFQ landings are first examined at the aggregated regional and state levels. Next, the differential effects of the IFQ Program across communities are assessed with respect to both QS holdings of residents and, where data confidentiality restrictions allow, IFQ landings. Time-series data are presented across identified categories of communities, including the 1) top communities in terms of halibut and sablefish landings and QS holdings and 2) communities eligible to establish an entity to hold and lease halibut and/or sablefish QS under the Community Quota Entity (CQE) Program, implemented in 2004.

2.9.2.1 Changes in Halibut and Sablefish IFQ Landings and QS Holdings by State/Region

The 2016 IFQ Program Review showed that there was very little sablefish shoreside processing outside of Alaska prior to IFQ Program implementation. There was a slight increase in shoreside processing of sablefish outside of Alaska immediately following Program implementation, but sablefish landings at non-Alaska shoreside processors have been negligible since then. Within the halibut fishery, after a slight increase in the percentage of the total shoreside halibut IFQ landed outside of Alaska in the years immediately following implementation of the IFQ Program, there was a decrease over the subsequent years relative to the baseline period. This change was anticipated at the time of IFQ Program implementation and is aligned with expectations about greater incentives to land halibut at shoreside processors in Alaska.

Table 53 and Table 54 show the area of residence of halibut and sablefish QS holders, respectively. The tables indicate that there continues to be substantial variation across Alaska regions for both species with respect to the distribution of QS holdings. Notable increases in halibut QS ownership occurred in communities in Southeast Alaska and the Aleutian Islands. With respect to sablefish QS ownership, increases were seen in Aleutian Islands and Bering Sea communities, especially in recent years. Both halibut and sablefish QS showed a trend toward increasing Alaska ownership and decreasing Washington ownership. As discussed in the 2016 IFQ Program Review, this change likely reflects the impacts of regulatory changes to particular vessel classes.

Table 53. Halibut QS Ownership by Area of Residence (Millions of QS)

	Alaska Regions						States				
Year	AI	BS	CG	INT	SE	WG	AK	OR	WA	Other	Total
2013	0.5	5.5	103.1	2.2	88.5	3.9	203.7	22.7	82.5	22.7	**331.6**
2014	1.1	6.4	100.5	2.2	89.6	3.9	203.7	23.9	83.5	20.5	**331.6**
2015	1.1	6.4	99.0	2.7	90.8	4.0	204.0	23.8	84.4	19.2	**331.4**
2016	1.0	6.3	98.0	2.3	91.6	3.8	203.0	23.3	85.2	19.8	**331.3**
2017	1.0	6.3	101.9	2.7	91.3	4.0	207.2	23.6	82.1	18.4	**331.3**
2018	1.1	6.5	97.6	2.8	93.2	4.0	205.1	23.7	83.0	19.5	**331.3**
2019	1.6	5.9	97.7	2.7	97.6	3.8	209.4	24.1	78.7	19.1	**331.3**
2020	1.5	4.5	97.4	2.9	97.1	3.5	206.9	24.6	78.1	21.6	**331.3**
2021	1.7	5.9	97.8	2.9	99.2	3.6	211.2	23.3	77.1	19.7	**331.3**
2022	1.7	5.9	96.3	3.1	100.3	3.7	211.0	22.8	75.8	21.5	**331.1**
2023	1.7	5.5	100.3	3.0	100.4	3.9	214.8	22.2	72.8	21.2	**331.0**

Note: AI=Aleutian Islands; BS=Bering Sea; CG=Central Gulf; INT=Interior; SE=Southeast; WG=Western Gulf; AK=Alaska; OR=Oregon; WA=Washington
Source: NPFMC (2024), NPFMC (2023)

Table 54. Sablefish QS Ownership by Area of Residence (Millions of QS)

	Alaska Regions						States				
Year	AI	BS	CG	INT	SE	WG	AK	OR	WA	Other	Total
2013	0.6	4.2	52.0	0.5	78.4	0.1	135.7	11.6	148.9	21.5	**317.7**
2014	0.7	4.3	51.0	0.5	78.7	0.1	135.3	12.2	147.4	22.9	**317.8**
2015	0.2	4.6	52.1	0.5	77.7	0	135.1	11.6	147.3	23.8	**317.8**
2016	0.2	5.2	52.9	0.6	78.9	0	137.8	10.4	145.4	24.2	**317.7**
2017	0.3	5.1	60.4	0.6	77.0	0	143.5	10.4	142.3	21.6	**317.7**
2018	1.1	8.1	52.6	0.7	78.6	0	141.1	10.4	142.5	23.7	**317.7**
2019	1.1	8.1	51.2	1.0	81.1	0	142.4	10.9	138.8	25.6	**317.7**
2020	0.8	5.2	54.3	1.0	81.1	0	142.4	16.6	131.2	27.6	**317.7**
2021	1.2	8.3	60.6	0.9	81.7	0.1	152.8	17.0	122.4	25.5	**317.7**
2022	2.1	8.1	59.2	1.5	82.3	0.1	153.3	21.2	118.6	24.8	**317.7**
2023	2.1	8.2	59.1	1.5	82.5	0.1	153.5	18.8	117.4	28.1	**317.8**

Note: AI=Aleutian Islands; BS=Bering Sea; CG=Central Gulf; INT=Interior; SE=Southeast; WG=Western Gulf; AK=Alaska; OR=Oregon; WA=Washington
Source: NPFMC (2024), NPFMC (2023)

2.9.2.2 Changes in Halibut and Sablefish IFQ Landings and QS Holdings by Community

Top Communities for Landings and QS

Prior to and after implementation of the IFQ Program landings of halibut and sablefish were concentrated in certain communities. Table 55 and Table 56 list the top communities from high to low in terms of halibut and sablefish IFQ landings at the start of the IFQ Program (1995) and in 2023. The top six communities for halibut landings were consistently, with occasional rank reordering, Kodiak, Petersburg, Homer, Sitka, Juneau, and Anchorage. Combined, these communities accounted for 51% of the total halibut IFQ landings in 1995, and 45% in 2023. The top communities for sablefish landings were more variable, but consistently the top seven were Sitka, Petersburg, Kodiak, Homer, Juneau, Anchorage, and Seward. Combined, these communities accounted for 40% of the total sablefish IFQ landings in 1995, and 45% in 2023. All the communities with a consistently high ranking are larger, regional port communities, and Homer, Kodiak, Petersburg, and Sitka have a long history of engagement in commercial fisheries, including the halibut and sablefish fisheries. Some communities that were among the top ten in 1995 saw large decreases in landings, such as St. Paul for halibut and Pelican and Port Alexander for sablefish. Yakutat, on the other hand, experienced a large increase in sablefish landings.

Table 55. Landings in the Halibut IFQ Fishery by Residents of Top Communities

Port	1995 Rank	1995 Pounds (net wt.)	Percent of 1995 landings	2023 Rank	2023 Pounds (net wt.)	Percent of 2023 landings
Kodiak	1	6,275,683	20.0%	2	2,520,037	10.6%
Petersburg	2	2,744,383	8.8%	3	1,955,773	8.2%
Homer	3	2,691,987	8.6%	1	2,773,599	11.6%
Sitka	4	2,316,737	7.4%	4	1,779,544	7.5%
Juneau	5	1,147,523	3.7%	5	911,997	3.8%
Anchorage	6	802,028	2.6%	6	658,520	2.8%
Seward	7	655,013	2.1%	11	336,238	1.4%
Wrangell	8	568,475	1.8%	10	416,902	1.7%
Ketchikan	9	534,919	1.7%	9	423,167	1.8%
St. Paul	10	419,211	1.3%	29	65,092	0.3%
Cordova	14	314,091	0.8%	8	1,074,494	2.5%
Unalaska	12	403,497	1.0%	10	816,313	1.9%
Total		**18,948,289**	**45.6%**		**22,177,952**	**51.6%**

Source: Developed by Northern Economics based on data from AKFIN (2024)

Table 56. Landings in the Sablefish IFQ Fishery by Residents of Top Communities

Port	1995 Rank	1995 Pounds (net wt.)	Percent of 1995 landings	2023 Rank	2023 Pounds (net wt.)	Percent of 2023 landings
Sitka	1	5,366,751	12.9%	1	6,306,310	14.7%
Petersburg	2	3,655,363	8.8%	3	3,441,826	8.0%
Kodiak	3	2,597,070	6.3%	6	1,399,286	3.3%
Homer	4	1,530,316	3.7%	2	3,896,234	9.1%
Juneau	5	1,362,822	3.3%	4	1,679,192	3.9%
Anchorage	6	952,194	2.3%	7	1,079,308	2.5%
Seward	7	893,763	2.2%	5	1,584,727	3.7%
Pelican	8	753,074	1.8%	19	67,875	0.2%
Ketchikan	9	619,109	1.5%	9	819,787	1.9%
Port Alexander	10	500,239	1.2%	26	12,600	0.0%
Cordova	11	367,517	1.2%	7	546,059	2.3%
Yakutat	27	109,467	0.3%	8	471,895	2.0%
Total		**18,632,943**	**59.5%**		**12,858,823**	**53.9%**

Source: Developed by Northern Economics based on data from AKFIN (2024)

Table 57 and Table 58 list the top communities from high to low in terms of halibut and sablefish QS holdings by residents in 1995, 1999, and 2023. The year 1999 is included because QS transfer transactions were especially high during the first five years of the IFQ Program. The top seven communities for halibut QS holdings were consistently, with occasional rank reordering, Kodiak,

Homer, Seattle, Petersburg, Sitka, Anchorage, and Juneau. With their greater historical catches, these communities received a substantial proportion of the initial allocations. Combined, the residents of these communities accounted for 50% of the total halibut QS pool in 1995, 51% in 1999, and 45% in 2023. The top communities for sablefish QS holdings were more variable, but consistently the top five were Seattle, Sitka, Petersburg, Kodiak, and Homer. Combined, the residents of these communities accounted for 55% of the total sablefish QS pool in 1995, 54% in 1999, and 40% in 2023. The tables also show that many of the top ranked communities in terms of QS holdings experienced a net loss by 2023. These include Kodiak, Seattle, and Sitka for halibut QS, and Seattle, Petersburg, Homer and Kodiak for sablefish QS. The amount of halibut QS held by residents of Anchorage, Cordova, and Astoria increased substantially, while the residents of Edmonds, Anchorage, Seward, and Cordova increased their holdings of sablefish QS significantly. These QS increases suggest that some residents have the financial capability as well as the desire to expand their investments in the IFQ fisheries. However, any net increases in quota shares could also be indicative of QS holders moving to those communities.

Table 57. QS Holdings in the Halibut IFQ Fishery by Residents of Top Communities

Community	1995 Rank	1995 (% of Total)	1999 Rank	1999 (% of Total)	Percent Change (1995-1999)	2023 Rank	2023 (% of Total)	Percent Change (1995-2023)
Kodiak	1	17.0%	1	17.3%	1.8%	1	11.7%	-31.5%
Homer	2	7.5%	3	6.9%	-9.3%	3	7.1%	-6.0%
Seattle, WA	3	7.1%	4	6.5%	-9.2%	5	4.6%	-36.0%
Petersburg	4	6.5%	2	8.4%	22.7%	2	8.7%	34.4%
Sitka	5	5.5%	5	5.6%	1.7%	4	5.6%	1.7%
Anchorage	6	3.4%	7	2.8%	-20.1%	7	3.5%	2.0%
Juneau	7	2.9%	6	3.9%	26.4%	6	3.9%	37.3%
Newport, OR	8	1.8%	9	1.7%	-1.8%	93	0.2%	-91.4%
Edmonds, WA	9	1.7%	13	1.5%	-12.7%	16	1.1%	-31.4%
Ketchikan	10	1.4%	8	1.9%	22.5%	11	1.4%	-4.4%
Cordova	21	0.8%	12	1.5%	44.6%	8	3.5%	317.3%
Wrangell*	11	1.4%	10	1.7%	15.0%	9	1.9%	35.4%
Astoria, OR	28	0.7%	22	0.8%	6.7%	10	1.7%	138.1%
Total		**57.9%**		**60.6%**			**54.8%**	

*Note: * The data for Wrangell includes data for Meyers Chuck, which was annexed into the City of Wrangel in 2008.*

Source: Developed by Northern Economics based on data from AKFIN (2024)

Table 58. QS Holdings in the Sablefish IFQ Fishery by Residents of Top Communities

Community	1995 Rank	1995 (% of Total)	1999 Rank	1999 (% of Total)	Percent Change (1995-1999)	2023 Rank	2023 (% of Total)	Percent Change (1995-2023)
Seattle, WA	1	27.1%	1	23.4%	-13.5%	1	12.7%	-53.3%
Sitka	2	9.5%	2	9.9%	4.2%	2	10.0%	4.8%
Petersburg	3	8.3%	3	9.6%	15.7%	3	8.3%	-0.5%
Kodiak	4	5.2%	4	6.5%	25.6%	4	5.5%	6.0%
Homer	5	4.4%	5	4.5%	2.0%	7	3.5%	-21.2%
Bainbridge Island, WA	6	2.5%	7	2.6%	2.1%	20	1.0%	-59.7%
Edmonds, WA	7	2.3%	8	2.6%	10.8%	6	3.8%	61.8%
Fort Bragg, CA	8	2.2%	9	1.7%	-20.3%	35	0.6%	-70.7%
Juneau	9	2.2%	6	2.9%	32.1%	9	2.6%	19.7%
Anchorage	10	1.8%	15	1.2%	-33.3%	5	5.4%	204.1%
Seward	16	1.1%	11	1.4%	33.4%	8	3.0%	181.6%
Cordova	42	0.3%	47	0.3%	-0.4%	10	2.1%	527.0%
Anacortes, WA	15	1.1%	10	1.5%	38.3%	13	1.3%	23.7%
Total		**68.0%**		**68.2%**			**59.7%**	

Source: Developed by Northern Economics based on data from NMFS (2024d)

Small, Rural Communities in the Gulf of Alaska

While some communities have benefited from the IFQ Program in terms of increased landings, the general pattern of halibut and sablefish QS ownership since program inception entails decreasing ownership in small, rural communities, with ownership consolidating towards urban centers and to larger rural communities with superior logistic resources (Kotlarov 2019).

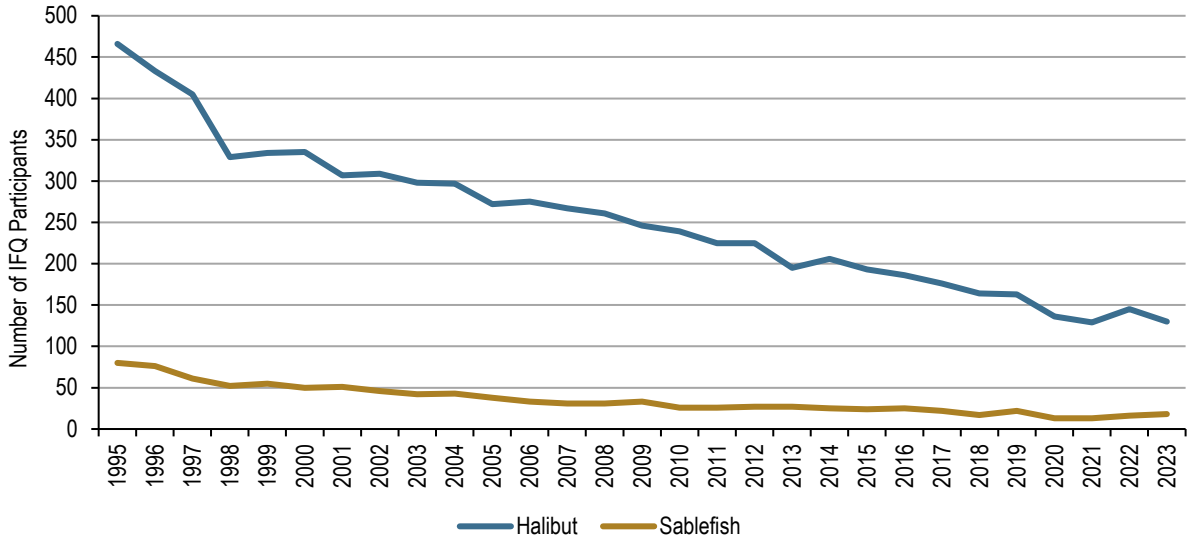
Langdon (2008) notes that halibut has historically been a mainstay of traditional diets of Alaska Natives in small communities around the GOA. Furthermore, customary and traditional foods such as halibut were not merely of nutritional importance—the ability to distribute, share, and celebrate communally traditional foods were, and continue to be, an integral part of the sociocultural fabric of these communities. With commercialization of the halibut fishery, the residents of these communities gradually become more involved in the commercial component of the fishery. Due to the availability of halibut near shore and to the high price per pound, good earnings could be obtained by catching a relatively small amount of fish. Sablefish were also targeted by these communities but to a lesser extent because the resource occurs further offshore and at a deeper depth, and, therefore, is more difficult to access by small vessels. As Langdon points out, the commercial harvests of fishery products provided an opportunity to obtain the cash needed to pursue the subsistence harvest using modern technology.

Langdon further notes that the residents of small, rural GOA communities tended to fish multiple fisheries opportunistically, and few residents were heavily invested in the commercial halibut or sablefish fisheries. Consequently, they did not receive substantial allocations of halibut or sablefish QS when the IFQ Program was implemented. As discussed in the 2016 IFQ Program Review, small QS allocations resulted in small amounts of IFQ pounds, which may not have been economically worthwhile to fish. Moreover, the higher willingness to pay for QS by larger, more efficient operators resulted in many small vessel owners in GOA communities having difficulty in competing for additional QS. The overall result was that some rural residents sold their QS, and there was a net transfer of QS out of rural GOA communities. This out-migration of QS was potentially damaging to these communities with respect to household income, income diversification opportunities, and employment. Given that these communities have long been dependent on fisheries for a large portion of their employment and income and have few alternative economic opportunities, the decline in the number of QS holders in these communities has resulted in increased unemployment and related negative social and economic impacts.

The declining participation in the IFQ fisheries by small, rural communities in the GOA is illustrated in Figure 89. The figure shows the number of individuals making IFQ landings who resided in the 45 communities that qualify for the GOA CQE Program, which is described in more detail in Section 2.9.2.3.[14] The number of residents in those communities who made landings of halibut decreased by 72% from 1995-2003, while the number of residents who made landings of sablefish decreased by 78%.

[14] Eligibility to participate in the initial CQE Program was limited to communities with fewer than 1,500 people, documented historical participation in the IFQ fisheries (at least one landing of halibut or sablefish), direct access to saltwater on the Gulf of Alaska coast, and no road access to a larger community.

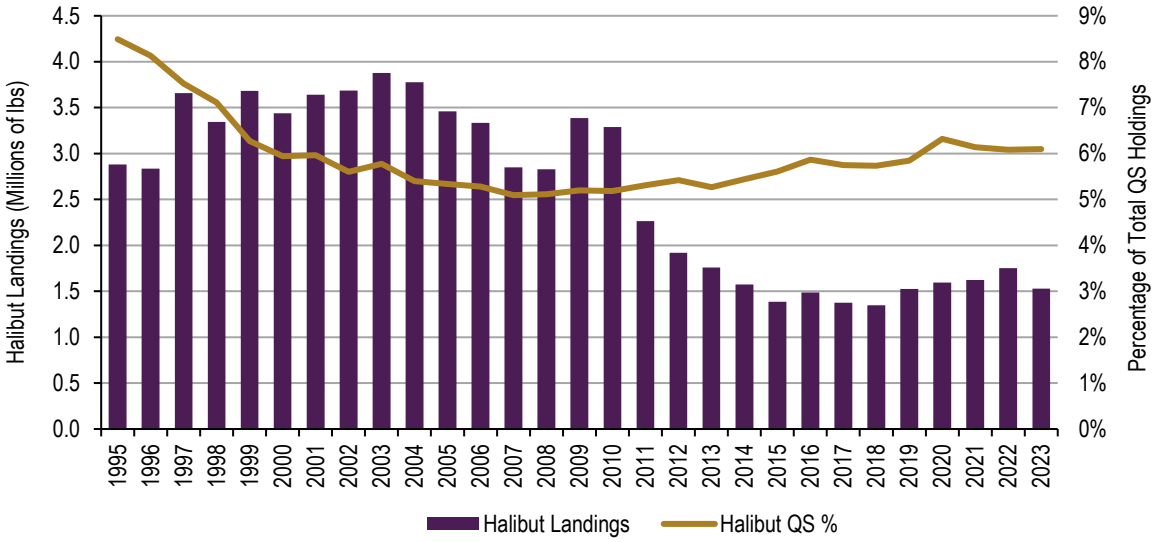
Figure 89. Participation in the Halibut and Sablefish IFQ Fisheries by All Residents of GOA CQE-Eligible Communities



Source: Developed by Northern Economics based on data from AKFIN (2024)

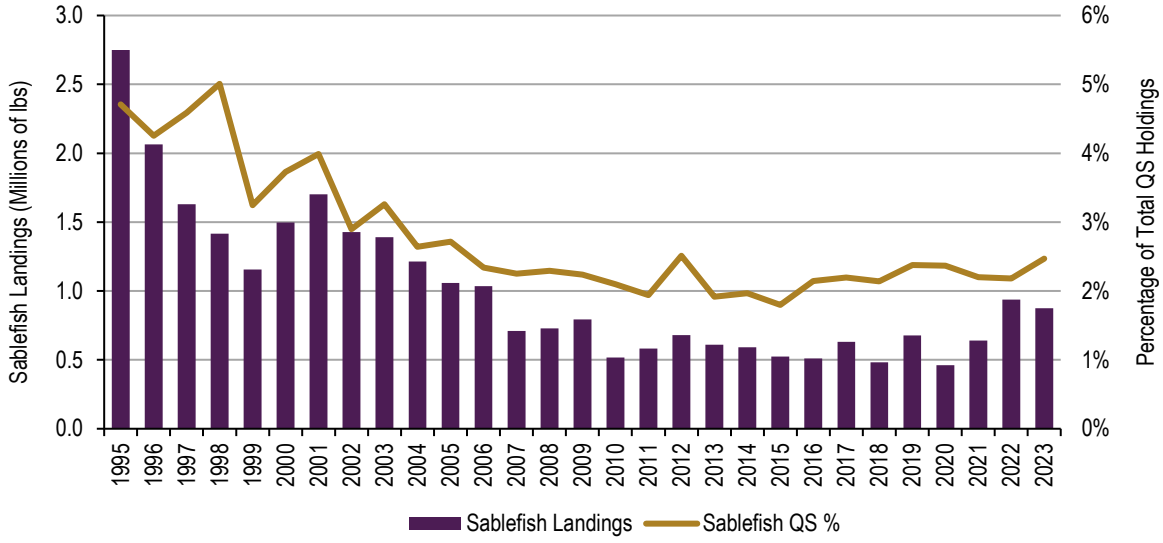
Figure 90 and Figure 91 show the trends in the halibut and sablefish QS holdings of the residents of the communities that qualify for the GOA CQE Program. From the start of the IFQ Program, CQE-eligible community resident QS holdings accounted for a small percentage of the total QS pools in the fisheries. During the initial years of the Program the 45 communities, together, experienced declines in holdings of halibut QS and sablefish QS, but since around 2009, QS holdings for both fisheries stabilized or even increased. As discussed in the 2016 IFQ Program Review, any transfers of QS in and out of rural Alaska communities could be indicative not just of rural residents buying or selling QS but also of QS holders changing their place of residence. However, the impact on a given community with respect to income from the harvest of the resultant IFQ either accruing to or leaving the community would be the same. The two figures also track the aggregate IFQ landings by residents of the GOA CQE-eligible communities. While part of the variation in IFQ landings is due to changes in the amount of QS held by community residents, a comparison of the landings trends to the TAC trends shown in Figure 3 and Figure 4 in Section 2 suggests that changes in the halibut and sablefish TACs account for much of the variation. Buyer/processor movements may also have contributed to changes in landings.

Figure 90. Total QS Holdings and Landings in the Halibut IFQ Fishery by All Residents of GOA CQE-Eligible Communities



Source: Developed by Northern Economics based on data from NMFS (2024d) AKFIN (2024)

Figure 91. Total QS Holdings and Landings in the Sablefish IFQ Fishery by All Residents of GOA CQE-Eligible Communities



Source: Developed by Northern Economics based on data from NMFS (2024d) and AKFIN (2024)

Given that large QS acquisitions by the residents of some GOA CQE-eligible communities could skew the overall QS holdings of these communities, Table 59 describes the trend in halibut and sablefish QS holdings at the individual community level. Data for each community are presented for 1995 and 2023. The blue highlighted communities are those in which there was an increase in community

resident QS holdings between initial issuance and 2023, or the resident QS holdings were greater than zero and remained the same between initial issuance and 2023. Of the 45 CQE-eligible communities in the GOA, only 3 had stable or increased community resident QS holdings in both IFQ fisheries since initial issuance. Halibut QS holdings were stable or increased in seven communities, and sablefish QS holdings were stable or increased in four communities. In some of these communities, such as Perryville, Metlakatla, Elfin Cove, and Yakutat, the QS increases were large in both percentage and absolute terms. Overall, however, residents of the majority of CQE-eligible communities experienced substantial decreases in QS holdings in both IFQ fisheries.

Table 59. QS Holdings in the Halibut and Sablefish IFQ Fisheries by Residents of GOA CQE-Eligible Communities

	Halibut					Sablefish				
Community	Initial Issuance	1999	Percent Change	2023	Percent Change	Initial Issuance	1999	Percent Change	2023	Percent Change
Akhiok	42,671	0	-100.0%	0	-100.0%	0	0	N/A	0	N/A
Angoon	798,142	375,942	-52.9%	170,909	-78.6%	1,237,242	155,966	-87.4%	0	-100.0%
Chenega	16,286	628	-96.1%	0	-100.0%	0	0	N/A	0	N/A
Chignik	621,738	218,539	-64.9%	128,220	-79.4%	0	0	N/A	0	N/A
Chignik Lagoon	407,246	428,943	5.3%	365,147	-10.3%	0	0	N/A	0	N/A
Chignik Lake	1,866	1,866	0.0%	1,866	0.0%	0	0	N/A	0	N/A
Coffman Cove	20,721	0	-100.0%	50,559	144.0%	0	0	N/A	0	N/A
Cold Bay	0	0	N/A	0	N/A	0	0	N/A	0	N/A
Craig	1,966,979	1,529,739	-22.2%	2,049,706	4.2%	990,426	655,316	-33.8%	725,199	-26.8%
Edna Bay	526,658	216,918	-58.8%	119,913	-77.2%	244,077	1,914	-99.2%	0	-100.0%
Elfin Cove	407,021	619,959	52.3%	1,262,578	210.2%	155,967	351,964	125.7%	346,736	122.3%
Game Creek	0	0	N/A	0	N/A	0	0	N/A	0	N/A
Gustavus	610,720	492,530	-19.4%	475,219	-22.2%	477,964	478,951	0.2%	99,153	-79.3%
Halibut Cove	262,736	426,242	62.2%	376,826	43.4%	0	707	N/A	707	N/A
Hollis	0	0	N/A	0	N/A	0	0	N/A	0	N/A
Hoonah	2,825,177	1,765,509	-37.5%	1,171,031	-58.6%	1,917,103	1,013,821	-47.1%	433,680	-77.4%
Hydaburg	405,285	220,901	-45.5%	19,962	-95.1%	223,941	185,071	-17.4%	9,011	-96.0%
Ivanof Bay	19,590	14,638	-25.3%	0	-100.0%	0	0	N/A	0	N/A
Kake	1,768,742	1,335,618	-24.5%	508,202	-71.3%	323,699	309,797	-4.3%	0	-100.0%
Karluk	0	0	N/A	0	N/A	0	0	N/A	0	N/A
Kasaan	0	0	N/A	0	N/A	0	0	N/A	0	N/A
King Cove	1,864,458	937,838	-49.7%	1,124,304	-39.7%	930,494	209,677	-77.5%	456	-100.0%
Klawock	376,475	247,787	-34.2%	4,694	-98.8%	141,370	226,847	60.5%	0	-100.0%
Larsen Bay	124,344	4,586	-96.3%	29,905	-75.9%	0	0	N/A	0	N/A
Metlakatla	757,155	304,985	-59.7%	87,104	-88.5%	118,259	26	-100.0%	369,655	212.6%
Meyers Chuck*					N/A					N/A
Nanwalek	2,218	0	-100.0%	0	-100.0%	0	0	N/A	0	N/A

	Halibut					Sablefish				
Community	Initial Issuance	1999	Percent Change	2023	Percent Change	Initial Issuance	1999	Percent Change	2023	Percent Change
Naukati Bay	17,506	0	-100.0%	0	-100.0%	0	0	N/A	0	N/A
Old Harbor	758,425	562,085	-25.9%	415,255	-45.2%	36,822	22,858	-37.9%	0	-100.0%
Ouzinkie	813,542	607,009	-25.4%	238,589	-70.7%	91,457	91,457	0.0%	0	-100.0%
Pelican	2,440,435	1,744,521	-28.5%	1,496,620	-38.7%	3,150,327	2,121,137	-32.7%	2,472,482	-21.5%
Perryville	51,743	23,265	-55.0%	171,975	232.4%	0	0	N/A	0	N/A
Point Baker	545,188	260,740	-52.2%	128,838	-76.4%	364	0	-100.0%	364	0.0%
Port Alexander	828,942	730,203	-11.9%	227,749	-72.5%	734,129	632,473	-13.8%	61,784	-91.6%
Port Graham	160,500	142,904	-11.0%	15,980	-90.0%	380	380	0.0%	0	-100.0%
Port Lions	425,710	192,137	-54.9%	118,360	-72.2%	1,121	0	-100.0%	0	-100.0%
Port Protection	38,031	36,572	-3.8%	0	-100.0%	0	0	N/A	0	N/A
Sand Point	2,978,269	2,801,285	-5.9%	2,103,608	-29.4%	996,049	90,067	-91.0%	90,067	-91.0%
Seldovia	2,814,924	2,855,553	1.4%	1,804,053	-35.9%	2,166,188	3,486,907	61.0%	935,384	-56.8%
Tatitlek	18,660	0	-100.0%	0	-100.0%	0	0	N/A	0	N/A
Tenakee Springs	321,783	228,282	-29.1%	175,961	-45.3%	175,968	134,731	-23.4%	197,366	12.2%
Thorne Bay	214,168	192,400	-10.2%	152,357	-28.9%	86,505	279	-99.7%	0	-100.0%
Tyonek	0	0	N/A	0	N/A	0	0	N/A	0	N/A
Whale Pass	9,511	13,070	37.4%	0	-100.0%	0	0	N/A	0	N/A
Yakutat	1,509,041	1,210,754	-19.8%	3,834,599	154.1%	321,275	100,270	-68.8%	141,992	-55.8%

Note: Blue highlighted communities are those in which there was an increase in community resident QS holdings between initial issuance and 2023, or the resident QS holdings were greater than zero and remained the same between initial issuance and 2023.

** Data for Meyers Chuck are not presented because was annexed into the City of Wrangell in 2008.*

Source: Developed by Northern Economics based on data from AKFIN (2024)

Many of the CQE-eligible communities in the GOA also experienced a loss of halibut buyers after IFQ Program implementation. The 2016 IFQ Program Review noted once the QS were sold out of some remote communities, the incentive to deliver to local buyers diminished. In addition, buyers in communities without access to air or road transportation were unable to compete in a market that increasingly consisted of fresh halibut. According to the previous review, the movement of buyers out of some remote rural Alaska communities potentially created negative spillover impacts on availability of support services and on fuel prices, increasing operating costs for IFQ fishery harvesters in those communities and further reducing their competitiveness in the market for QS.

2.9.2.3 Community Quota Equity Program

As discussed in the 2016 IFQ Program Review, the recognition that significant amounts of sablefish and halibut QS were being transferred out of small, remote communities in the GOA led, in 2004, to the implementation of Amendment 66. Under this amendment, 42 communities each received approval to create a nonprofit entity (Community Quota Entity, or CQE) that could purchase and hold halibut and sablefish catcher vessel QS in the GOA (Halibut Areas 2C, 3A, and 3B and Sablefish Area SE, WY CG and WG). Each CQE can then lease its QS to community residents at a favorable rate. The intent is to allow residents an opportunity to acquire the capital and experience to purchase their own QS in the IFQ fisheries. In 2013, the communities of Cold Bay, Game Creek, and Naukati Bay became eligible to participate in the GOA CQE Program, and CQEs were allowed to purchase a limited amount of Class D QS in Area 3A. In 2014, an Aleutian Islands CQE Program was implemented for halibut IFQ regulatory Area 4B and the sablefish Aleutian Islands regulatory area. Adak is the only community eligible to participate in this program. Both CQE Programs include constraints on which CQEs may purchase QS in which regulatory areas. In addition, there are limits on the amount of QS a CQE may own, and the amount of QS an individual in a given community may lease.

Of the 46 communities eligible to participate in the GOA and Aleutian Islands CQE Programs, as of 2023, seven have purchased halibut or sablefish QS through CQEs. The QS holdings by CQE are shown in Table 60. Over the years, the QS holdings of CQEs have represented a small but growing fraction of the total halibut and sablefish QS pools. CQE holdings are presented in the table rather than actual leases because often CQEs lease the same IFQ more than once due to the initial lessor being unsuccessful in harvesting the IFQ. The CQEs that have purchased halibut or sablefish QS have each done so in unique ways. For example, the Community Holding Corporation for Ouzinkie used proceeds from the sale of timber on tribal lands; the Adak Community Development Corporation used royalties from its Western AI golden king crab allocation; and the Hoonah Community Fisheries Corporation used lease payments received for their community charter halibut permits (CHPs) and a grant from the City of Hoonah (Kotlarov 2019).

Table 60. QS Holdings in the Halibut and Sablefish IFQ Fisheries by CQEs

	Halibut								Sablefish
Year	Adak: Adak Community Development Corporation	Hoonah: Hoonah Community Fisheries Corporation	Perryville: Perryville CQE, Inc.	Old Harbor: Cape Barnabas, Inc.	Ouzinkie: Community Holding Corporation for Ouzinkie	Port Lions: Port Lions Fisheries, Inc.	Thorne Bay: Thorn Bay Fisheries Association	Total	Adak: Adak Community Development Corporation
2006				151,234				151,234	
2007				151,234				151,234	
2008				151,234				151,234	
2009				151,234				151,234	
2010				151,234				151,234	
2011				151,234	106,488			257,722	
2012				151,234	106,488			257,722	
2013				151,234	258,724			409,958	
2014	615,956			151,234	258,724			1,025,914	102,230
2015	615,956			194,596	281,593			1,092,145	102,230
2016	678,609			194,596	281,593			1,154,798	102,230
2017	678,609	114,232		194,596	440,668			1,313,873	221,544
2018	678,609	114,232	13,072	251,926	440,668			1,498,507	720,570
2019	1,196,304	114,232	13,072	194,596	440,668			1,958,872	720,570
2020	1,196,304	114,232	13,072	194,596	451,644			1,969,848	720,570
2021	1,369,350	1,133,232	134,072	194,596	451,644			3,282,894	1,133,232
2022	1,369,350	119,352	148,710	337,914	783,109		8,904	2,758,435	1,976,539
2023	1,369,350	119,352	148,710	337,914	786,942	328,404	8,904	2,762,268	1,976,539

Source: NMFS (2024b)

The amount of CQE IFQ landings for all areas is shown in Table 61. In order to avoid confidentiality concerns, sablefish and halibut are listed together. The landings derived from CQEs have been highly variable; they fell slightly from the high seen in 2022.

Table 61. Total Landings in the Halibut and Sablefish IFQ Fisheries by All CQEs

Year	Pounds
2023	325,956
2022	417,726
2021	225,825
2020	97,056
2019	157,808
2018	286,918
2017	87,486

Source: NPFMC (2023)

As described in the 2016 IFQ Program Review, a 2010 review of the GOA CQE Program explored the factors underlying the limited acquisition of QS under the program. One factor was that the program was not established until ten years after the IFQ Program began, by which time QS had moved out of

many communities. In addition, the availability and price of QS, together with a lack of access to capital and financing for QS purchases, was cited as primary factors contributing to limited community participation (detailed data on trends in QS prices are provided in Section 2.8.5). Lower halibut catch limits during the past decade have likely exacerbated these challenges for CQEs, as there are fewer pounds of halibut available. Other factors are specific to the CQE Program, including the administrative cost necessary to both establish a nonprofit corporation and manage assets and program-related restrictions, such as the types of QS that CQEs may purchase, the residency requirement for leasing of CQE held IFQ, and vessel use caps.

To address some of the issues identified in the 2010 CQE Program review, the Council recommended and NMFS implemented amendments to establish a CQE Program for halibut in Area 4B and for sablefish in the Aleutian Islands; revise vessel use caps held by CQEs; allow CQEs to hold and transfer small blocks of sablefish QS; and allow eligible CQE residents in Area 3A to fish halibut IFQ derived from CQE-held D class QS on C or D class vessels in Area 3A.

In addition, as described in the 2016 IFQ Program Review, the CQE Program was broadened to allow eligible communities to acquire access rights to fisheries other than the IFQ fisheries. For example, under the charter halibut limited access program, CQEs may request community charter halibut permits (CHPs) for use in Southeast or Southcentral Alaska. The CQE selects charter operators to use its community CHPs but retains ownership of the CHPs themselves. Vessels operating under a community CHP need not be based within the CQE community but are subject to all applicable fishing regulations and must either begin or end their fishing trips within the community designated on the permit. In Southeast Alaska (IPHC Area 2C), there are 20 CQE CHP communities and 14 in the central GOA (IPHC Area 3A). As of 2023, 20 CQEs held CHPs (Kotlarov 2018). Also, since 2011, CQEs have been able to receive non-trawl groundfish limited license permits endorsed for Pacific cod in the central or western Gulf of Alaska at no cost.

2.9.3 Potential Equity and Environmental Justice Concerns

EO 12898 (59 FR 7629; February 16, 1994), directs Federal agencies "to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." EO 12898 was supplemented by EO 13985 (86 FR 7009; January 25, 2021), which addresses issues of equity for Indigenous and Native American persons, persons who live in rural areas, and persons otherwise adversely affected by persistent poverty or inequality, among other groups, as well as underserved communities in general. In addition, as discussed in the 2012 Department of Commerce Environmental Justice Strategy (and repeated in the 2023 NOAA Fisheries Equity and Environmental Justice Strategy), in pursuing its mission of ensuring environmental justice in its programs, policies and activities, the Department is guided by a number of principles, including the following:

- All populations should share in (and are not excluded from) benefits of Departmental programs, policies and activities affecting human health or the environment.
- No populations should be affected in a disproportionately high and adverse manner by agency programs, policies or activities affecting human health or the environment.

Previous research uncovered evidence of potential equity and environmental justice concerns with the IFQ Program. Carothers et al. (2010) used the first five years of QS transfer transactions in the halibut IFQ fishery to look at the probability of buying and selling QS as a factor of the individual's characteristics, including residency. They found that residents of small, remote fishing communities were more likely to sell than buy QS, as were residents of Alaska Native villages. Carothers (2013) conducted a survey of halibut QS holders showing that individuals who make less money, and indigenous fishermen are more likely to sell QS and less likely to buy QS.

The current review examined potential equity and environmental justice concerns by reporting the percent changes in QS holdings experienced by residents of Alaska communities with federally recognized Alaska Native tribes and by residents of Alaska communities with concentrations of minority and/or low-income populations. Information provided in the community profiles in Appendix 1 was used to identify Alaska communities with tribes and with concentrations of minority and/or low-income populations. Data on the race/ethnicity and income status of individual community residents who experienced changes in QS holdings are unknown, but a general knowledge of local fleets would suggest that the demographics of these individuals are largely reflective of the residential populations of the communities in which they are based.

As shown in Table 62, from 1995-2023, residents of tribal communities and communities with high low-income populations and with both high minority and low-income populations experienced declines in QS holdings in the halibut IFQ fishery (-4.2%, -18.4%, and -22.2%, respectively), while residents across all Alaska communities participating in the harvesting sector of the fishery experienced an increase (1.1%). With respect to the sablefish IFQ fishery, residents of communities with high low-income populations and with both high minority and low-income populations experienced declines in QS holdings (-15.3% and -11.55%, respectively), while QS holdings increased across residents of all participating communities combined (21.9%). These disproportionate reductions in QS, together with the impacts to small, rural GOA communities described in Section 2.9.2.2 and the results of earlier studies described above, suggest that certain outcomes of the IFQ Program may be of potential environmental justice concern. In particular, the adverse economic, social, and cultural impacts resulting from QS losses and reduced access to the halibut and sablefish fisheries may have been predominantly borne, more severe, or of a greater magnitude in communities with a substantial presence of low-income and minority residents.

Table 62. QS Holdings in the Halibut and Sablefish IFQ Fisheries by Residents of Communities with Tribes and Concentrations of Minority and Low-income Populations

		Halibut					Sablefish				
	Number of Communities	Initial Issuance (% of Total)	1999 (% of Total)	Percent Change (1995-1999)	2023 (% of Total)	Percent Change (1995-2023)	Initial Issuance (% of Total)	1999 (% of Total)	Percent Change (1995-1999)	2023 (% of Total)	Percent Change (1995-2023)
EJ Population (Tribal)	74	43.0%	45.4%	5.7%	41.2%	-4.2%	29.2%	32.1%	9.9%	31.2%	6.9%
EJ Population (Minority)	86	41.4%	42.6%	3.0%	41.9%	1.1%	21.1%	22.5%	6.6%	30.2%	43.3%
EJ Population (Low-Income)	87	39.3%	37.4%	-4.7%	32.0%	-18.4%	15.5%	14.6%	-5.6%	13.1%	-15.3%
EJ Population (Minority and Low-Income)	66	28.2%	27.4%	-2.7%	21.9%	-22.2%	9.3%	9.0%	-3.4%	8.3%	-11.5%
All Alaska Communities	129	63.0%	63.8%	1.4%	63.7%	1.1%	40.0%	42.2%	5.8%	48.3%	21.9%

Note: The term EJ (environmental justice) is used rather than EEJ (equity and environmental justice) when referring to the populations listed in the table. As defined by Executive Order (EO) 12898, this is the applicable term when referring to minority and low-income populations. Communities with tribes and concentrations of minority and low-income populations are identified in the community profiles presented in Appendix 1

Source: Developed by Northern Economics based on data from AKFIN (2024)

Should a federal program, policy, or activity have any disproportionate adverse effects on minority, low-income, or tribal populations, Council of Environmental Quality (CEQ) guidelines require the responsible federal agency to work with the affected populations to identify actions that might mitigate these effects (CEQ 1997). As discussed previously, in 2004, Amendment 66 was implemented, which allowed specified communities to create non-profit entities (i.e., CQEs) to purchase, hold, and lease halibut and sablefish QS. The analysis of environmental justice impacts in the final environmental review for that amendment stated:

> This action would provide additional opportunities for residents in smaller rural coastal communities to participate in the halibut and sablefish fisheries. As noted in Section 2 of this document, many of these communities have a relatively high proportion of Native Alaskan residents. This action would be expected to increase economic opportunities for these residents and would be expected to provide additional economic benefits (NPFMC 2004).

While the expected benefits of Amendment 66 have been realized by some communities, the overall mitigative impact of the amendment has been limited. As described above, of the 46 communities eligible to participate in the GOA and Aleutian Islands CQE Programs, as of 2023, only seven have purchased halibut or sablefish QS through CQEs. QS acquisition by CQEs has been limited by the same factors that inhibit QS purchases by individuals, including high QS prices, a limited availability of QS on the market, and a lack of access to capital and financing. Other obstacles are specific to the CQE

Program, including the administrative cost necessary to both establish a nonprofit corporation and manage assets and program-related restrictions, such as the types of QS that CQEs may purchase, the residency requirement for leasing of CQE held IFQ, and vessel use caps.

2.10 Fishing Vessel Safety

This section addresses the following objective of the final EIS for the IFQ Program:

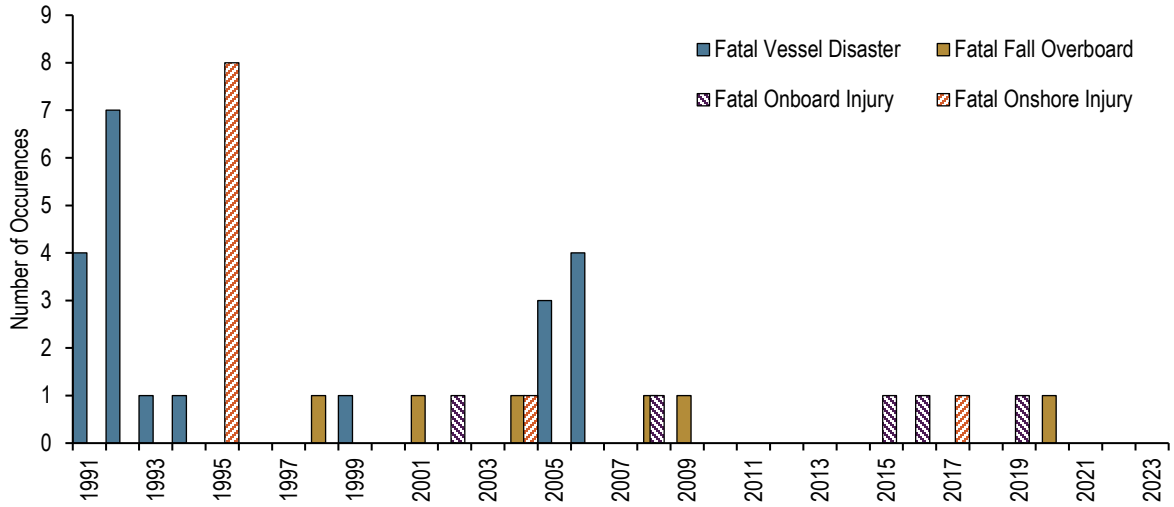
- Objective 1: Address the problems that have occurred with the current management regime—safety.

As noted in the 2016 review of the sablefish and halibut IFQ Program, safety concerns were a significant issue highlighted in the pre-IFQ open-access management regime. Many of these issues were tied to the derby-style of fishing which led to shorter fishing seasons, congested fishing grounds, and incentivized fishing in unsafe conditions. Shifting to the IFQ Program was expected to reduce these safety concerns by guaranteeing IFQ participants a percentage of the TAC, allowing fishermen the freedom to decide when and where they fish and dismantling the need for derby-style fishing.

The 2016 IFQ Program review highlighted the safety assessment produced by the National Institute for Occupational Safety and Health (NIOSH), which concluded that, while fatalities have continued to occur in the fishery after IFQ Program implementation, the program has led to decreased hazard for vessels in the fishery. This was buoyed by other assessments which found that in the six years following IFQ Program implementation, the number of fatalities and search and rescue missions significantly decreased (Lincoln et al. 2007) along with vessel losses (Hughes and Woodley 2007). A survey of captains and permit holders in the fishery conducted in 1999 showed that the majority believed that the IFQ Program made halibut fishing safer (Knapp 1999).

However, as highlighted by the fluctuations in the number and rate of deaths at sea since implementation of the IFQ Program as reported by the Commercial Fishing Incident Database (CFID), the halibut and sablefish fisheries still have ongoing risks (Figure 92). From 1995 through 2009, 24 fatalities were reported, with fatal onshore injuries as the leading cause, primarily due to the high number of incidences in 1995. Fatal vessel disasters were the next leading cause, spread across four vessel disasters caused at least in part by bad weather (Kotlarov 2020). This compares to the 4 years prior to IFQ Program implementation (1991-1994), which had 13 recorded fatalities, all of which were associated with vessel disasters. From 2010 onward, there were very few reported fatalities in the IFQ fisheries. A total of 5 deaths were reported, with fatal onboard injuries as the leading cause (3 deaths). This shift in in the leading causes of fatalities away from vessel disasters, along with a decrease in the rate of fatalities compared to the pre-IFQ management era, supports the claim that the fisheries have gotten safer since moving away from derby-style fishing.

Figure 92. Fatalities At Sea in the Halibut and Sablefish Fishery



Source: Developed by Northern Economics based on data from CFID provided by NIOSH (2024)

2.11 Biological Management

This section addresses the following objectives of the original EIS for the IFQ Program.

- Objective 1: Address the problems that have occurred with the current management regime—deadloss from lost gear, bycatch loss, and discard mortality.

The section explores how the IFQ Program has affected the biological challenges linked to the previous management regime for halibut and sablefish fisheries. While it is difficult to directly attribute the overall health of these resources to a specific management program due to various ecosystem factors, certain biological indicators were expected to be influenced by the shift in management. The section begins with a summary of the current IFQ species stock and then evaluates specific biological elements that may, or may not, be directly affected by IFQ management.

Deadloss from Lost or Abandoned Gear - The IFQ Program was expected to reduce gear losses and abandoned gear in fisheries by decreasing congestion on fishing grounds and allowing longer fishing seasons. This change gave fishermen more time to avoid gear tangles and retrieve lost gear, as the opportunity costs of time under the IFQ Program are different from an open-access regime. With longer seasons and guaranteed quotas, fishermen could be more selective about when to fish, unlike the open-access system where fishermen often set more gear than they could retrieve before the season ended.

Bycatch Loss - The IFQ Program was expected to increase groundfish bycatch retention in the halibut and sablefish fisheries. In the open-access regime, short fishing seasons led to high discard rates due to the high opportunity cost of retaining bycatch. However, with the IFQ Program's longer

fishing seasons and guaranteed allocations, this opportunity cost was reduced, allowing the fleet to retain more bycatch and lowering uncertainty about total fishing mortality for bycatch species.

Discard Mortality - When the IFQ Program was implemented, there were concerns that halibut and sablefish discards, and thus discard mortality, might increase due to incentives for highgrading. Under the IFQ Program, the lower opportunity cost of time, combined with guaranteed but limited quotas, created a greater incentive to highgrade compared to an open-access fishery. The incentive is driven by the price premium for larger fish and the cost per unit of landings. Larger fish fetch higher prices, while smaller fish yield less product and incur higher costs, potentially increasing the motivation to highgrade under the IFQ Program.

2.11.1 Current Halibut Stock

The International Pacific Halibut Commission (IPHC) conducts an annual assessment of the Pacific halibut stock, covering the range from northern California to Alaska. The most recent full assessment for Pacific halibut took place in 2022 (Stewart et al., 2022), with an update in 2023 (Stewart et al., 2024). After a continuous decline in the Pacific halibut stock from the late 1990s through 2012, the spawning biomass increased gradually until 2016, but decreased again by early 2023 to 171 million pounds. This recent slight decline in spawning biomass estimates is largely attributed to lower-than-expected commercial catch rates in 2023.

The 2022 stock assessment estimated a lower fishing intensity and a higher relative stock status compared to previous assessments, along with a 26% increase in the yield corresponding to the reference fishing intensity level (F43%) for 2023 compared to 2022. A key development in the 2022 Pacific halibut stock assessment was the direct estimation of natural mortality, which has been a long-standing source of uncertainty in Pacific halibut assessments. By 2022, there was a sufficient amount of data, including a four-year sex-ratio time series provided by the directed commercial fishery, to estimate natural mortality in 3 of the 4 models used in the assessment ensemble.

The most significant new information in the 2023 updated assessment came from the commercial fishery logbook trend, including the 2023 estimate and a revised lower catch-rate for 2022. This data alone led to an 11% decrease in the 2023 spawning biomass estimate compared to the 2022 stock assessment. While differences in trends between the FISS and the commercial fishery are not unusual, the sensitivity of this year's results underscores the importance of both time-series in accurately estimating stock size and trends.

The primary sources of uncertainty in recent stock assessments include the estimation of model parameters, the handling of data sources (e.g., short and long time-series), natural mortality (fixed versus estimated), the approach to spatial structure in the data, and other variations between the models in the ensemble. While this ensemble approach represents an improvement over relying on a single assessment model, several significant sources of uncertainty remain unaddressed.

- Fishing mortality from all sources in 2023 was estimated to be down 7% from 2022
- Biological data, including ages and lengths, from both the commercial fishery and the Fishery-Independent Setline Survey (FISS), indicate a continued shift from the previously dominant 2005 year-class to the 2012 cohort, which is now 11 years old in 2023 and represents the largest abundance at a single age.
- At the coastwide level, size-at-age for halibut remains stable or shows an increasing trend across the age ranges most relevant to the directed fisheries, depending on the specific IPHC Regulatory Area.

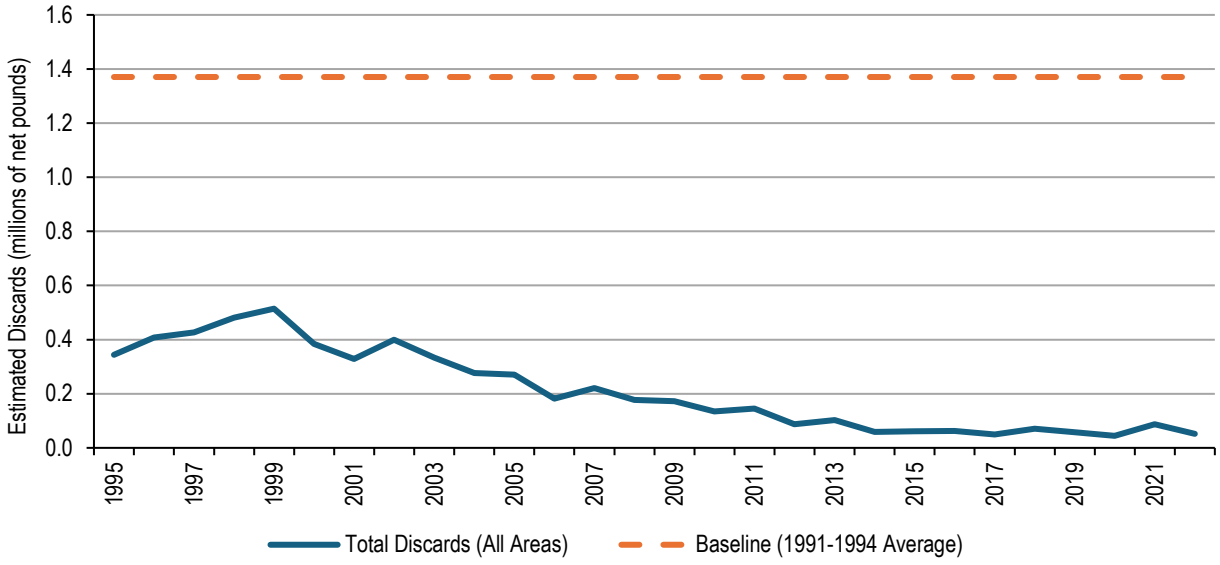
2.11.1.1 IFQ Management Impacts on Halibut

Deadloss from Lost or Abandoned Gear

The IPHC collects and summarizes data on lost or abandoned gear annually through the IPHC logbook program, which are required on any vessel fishing for halibut with an overall length of 26 feet or longer. Logbooks are primarily collected in the field by port samplers where data can be validated or clarified directly through interviews with the captains. Catch rates on abandoned gear are assumed to match the average catch rates of non-abandoned gear recovered in that regulatory area, and there is an assumed 100% mortality rate on any halibut estimated to be caught on lost or abandoned gear. Mortality may also be underestimated in cases where only a few or no skates are reported lost in a given area.

As noted in the 2016 IFQ Program Review, since mortality from lost abandoned gear as first estimated by the IPHC in 1985 and in the 10 years leading to IFQ Program implementation, deadloss estimates ranged from 0.77–3.27 Mlb (net weight). From 1995 to 2015, deadloss estimates dropped to between 0.06 and 0.51 Mlb, with an average of 0.26 Mlb. While there was a slight spike in 2021 in estimated deadloss mortality (Figure 93), the overall downward trend has continued since 2015, with a 2015-2022 average estimated deadloss of 0.06 Mlb (Table 63). This supports the conclusion that the IFQ Program has improved rates of gear loss by allowing for more controlled setting and hauling of gear. Without derby-style conditions, participants are also given more time to recover gear or fish in more adverse or challenging weather conditions.

Figure 93. Estimates of Pacific Halibut Mortality from Lost or Abandoned Longline Gear in the Halibut IFQ Fishery



Source: IPHC (2024a)

Table 63. Estimates of Pacific Halibut Mortality from Lost or Abandoned Longline Gear in the Halibut IFQ Fishery by Regulatory Area (Millions of Net Pounds)

	IPHC Regulatory Area										
Year	2A	2B	2C	3A	3B	4A	4B	4C	4D	4E	Total
1991	0.009	0.083	0.408	1.025	0.397	0.127	0.079	0.008	0.037	0.000	**2.175**
1992	0.010	0.066	0.206	0.635	0.192	0.060	0.046	0.014	0.018	0.000	**1.247**
1993	0.007	0.100	0.168	0.318	0.069	0.057	0.033	0.005	0.018	0.000	**0.775**
1994	0.001	0.067	0.190	0.855	0.051	0.055	0.037	0.003	0.027	0.000	**1.285**
1995	0.004	0.052	0.054	0.171	0.008	0.038	0.017	0.000	0.000	0.000	**0.344**
1996	0.006	0.035	0.070	0.193	0.020	0.043	0.032	0.009	0.000	0.000	**0.407**
1997	0.006	0.048	0.068	0.138	0.079	0.038	0.039	0.009	0.001	0.000	**0.427**
1998	0.001	0.063	0.062	0.216	0.067	0.031	0.017	0.006	0.017	0.000	**0.481**
1999	0.009	0.052	0.098	0.149	0.084	0.054	0.039	0.015	0.013	0.000	**0.514**
2000	0.007	0.040	0.055	0.121	0.079	0.024	0.053	0.007	0.000	0.000	**0.385**
2001	0.003	0.036	0.039	0.086	0.044	0.059	0.042	0.008	0.011	0.000	**0.329**
2002	0.005	0.035	0.038	0.173	0.055	0.045	0.042	0.004	0.001	0.000	**0.399**
2003	0.002	0.044	0.029	0.137	0.048	0.051	0.019	0.003	0.001	0.000	**0.334**
2004	0.000	0.055	0.032	0.093	0.023	0.046	0.019	0.004	0.005	0.000	**0.276**
2005	0.007	0.042	0.047	0.096	0.032	0.033	0.013	0.002	0.000	0.000	**0.271**
2006	0.002	0.054	0.028	0.051	0.016	0.021	0.007	0.001	0.001	0.000	**0.182**
2007	0.003	0.048	0.026	0.087	0.022	0.020	0.012	0.000	0.002	0.000	**0.221**
2008	0.000	0.031	0.016	0.076	0.004	0.015	0.024	0.001	0.009	0.000	**0.178**
2009	0.003	0.023	0.013	0.054	0.019	0.014	0.034	0.002	0.010	0.000	**0.173**
2010	0.001	0.030	0.010	0.037	0.020	0.012	0.014	0.001	0.010	0.000	**0.135**
2011	0.004	0.035	0.005	0.037	0.009	0.027	0.021	0.002	0.006	0.000	**0.146**
2012	0.005	0.019	0.013	0.023	0.011	0.005	0.008	0.001	0.003	0.000	**0.087**
2013	0.003	0.015	0.026	0.033	0.005	0.013	0.005	0.002	0.001	0.000	**0.102**
2014	0.004	0.019	0.006	0.012	0.003	0.004	0.009	0.000	0.002	0.000	**0.059**
2015	0.004	0.019	0.008	0.015	0.002	0.008	0.001	0.001	0.003	0.000	**0.061**
2016	0.003	0.025	0.006	0.009	0.001	0.005	0.002	0.000	0.005	0.005	**0.062**
2017	0.004	0.012	0.011	0.009	0.004	0.006	0.002	0.001	0.000	0.000	**0.049**
2018	0.004	0.017	0.011	0.016	0.008	0.006	0.006	0.002	0.000	0.000	**0.070**
2019	0.001	0.008	0.009	0.010	0.005	0.011	0.007	0.001	0.000	0.005	**0.058**
2020	0.000	0.014	0.006	0.009	0.003	0.006	0.004	0.000	0.002	0.000	**0.044**
2021	0.001	0.033	0.014	0.020	0.007	0.008	0.001	0.002	0.002	0.000	**0.088**
2022	0.000	0.012	0.014	0.013	0.007	0.002	0.003	0.001	0.000	0.000	**0.052**

Source: IPHC (2024a)

Bycatch Loss of Non-target Species

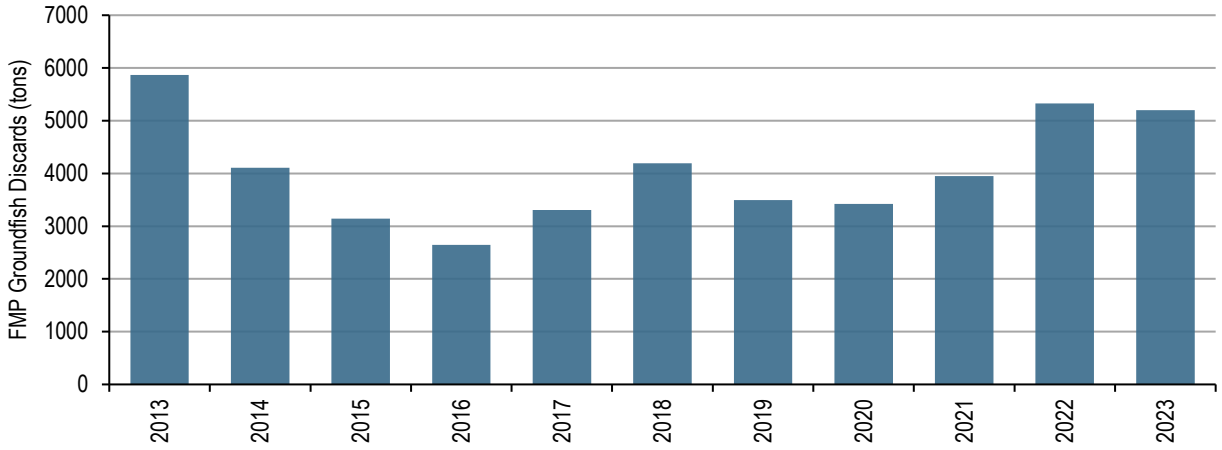
As noted in the previous review, discards of FMP groundfish in the IFQ fleet have historically not been estimated. However, the restructuring of the observer program in 2013 allowed for the estimation of non-target species discards by the halibut IFQ fleet through observer data. Due to the lack of data

prior to 2013, changes in non-target discards before and after implementation of the IFQ program cannot be estimated, though it is expected that shifting from derby-style fishing to longer, less-intensive fishing seasons would decrease non-target bycatch. However, as seen in Figure 94, bycatch of FMP groundfish has shown a large amount of inter-annual variability since the start of observer bycatch data collection in 2013. The discards shown here do not differentiate between hook & line gears and pot gears. As discussed earlier in Section 2.4.5.6, the halibut IFQ fishery is primarily prosecuted by hook & line gear and FMP groundfish discards primarily occur from this gear type, with FMP groundfish discards from pot gear making up an average 0.04% of discards during the 2013-2023 period.

Bycatch of FMP groundfish in the halibut IFQ fleet for shows a degree of inter-annual variability, with a high of nearly 6,000 metric tons in 2013 and a low of 2,650 metric tons in 2016 (Figure 94), with sharks, skates and Pacific cod making up the largest portion of reported bycatch. Fluctuations in FMP groundfish bycatch roughly follow the fluctuations in the annual harvest of halibut shown in 2.4.2.2, though FMP groundfish discards have shown a generally increasing trend since 2016. As seen in Figure 95, the discard rate of FMP groundfish[15] has also been increasing since 2016. Discard rates are calculated as the weight of ratio of discarded groundfish to the weight of retained IFQ halibut. While discard rates for FMP groundfish in the pre-IFQ fishery are not available for comparison, 2023 reported the highest discard rate of FMP groundfish (55%) since observer data began to be used to estimate discard rates in 2013. There have been no changes regulatory changes in gear usage in the IFQ halibut fishery during this period and hook & line gears remain the primary way the fishery is prosecuted, so the increase in FMP groundfish bycatch likely coincides with environmental factors and relative fluctuations halibut harvests.

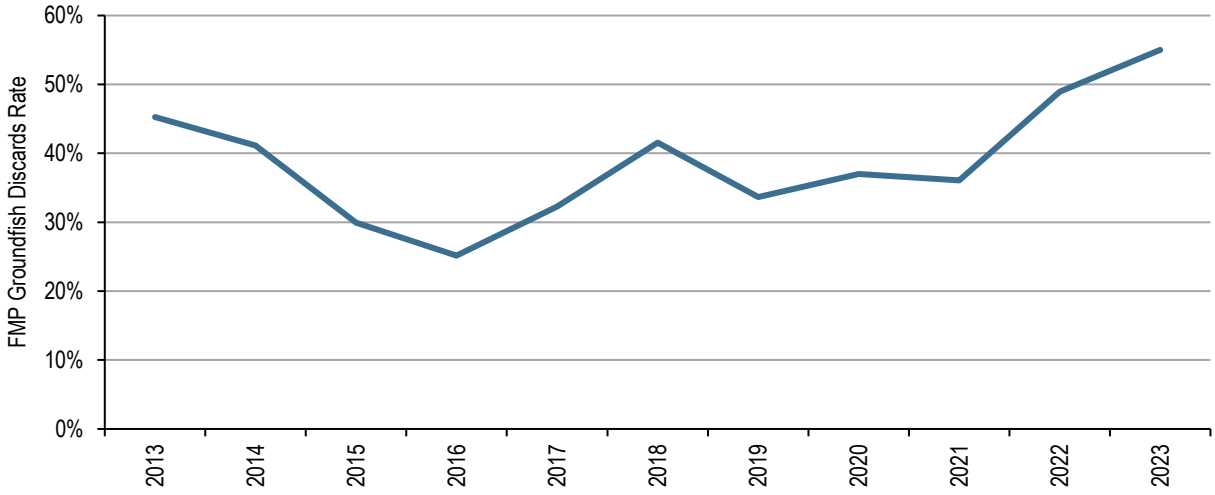
[15] The estimated discard rates discussed here only refer to the estimated discard rate of hook and line gears. While the discard rates estimated for pot gears from observer data during the 2013-2023 period are significantly lower, ranging from 0% to 4% compared to the estimated 25% to 55% for hook and line gears. However, since hook and line is the primary way the fishery is prosecuted, making up >99.5% of reported IFQ halibut harvests, the impact of pot gear bycatch on the fishery is minimal.

Figure 94. Discards of All FMP Groundfish in the Halibut IFQ Fleet (in metric tons)



Source: Developed by Northern Economics based on data from IPHC Fisheries Regulations and Data Services Branch (2024)

Figure 95. Discard Rate of All FMP Groundfish in the Halibut IFQ Fleet



Source: Developed by Northern Economics based on data from IPHC Fisheries Regulations and Data Services Branch (2024)

Discard Mortality

Incidental mortality of halibut in the commercial halibut fishery is defined as the mortality of any halibut that are not included in the landed catch and are reported as discards. This is termed as "commercial discard mortality" by the IPHC, and is estimated each year in the fishery by area. The main sources of this commercial discard mortality include: 1) halibut caught and discarded because they are below the legal size limit of 32 inches (U32), or 2) or regulatory discards, which are fish discarded for regulatory reasons (such as insufficient IFQ to cover an entire haul).

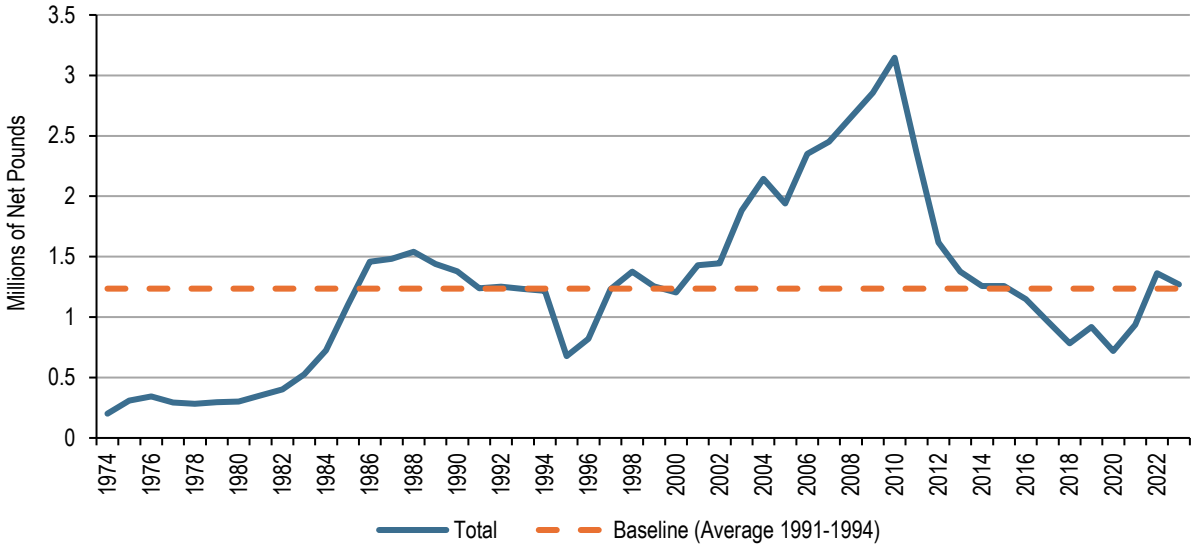
The IPHC has a standard estimate of 16% mortality for any halibut caught and discarded in the commercial halibut fishery (i.e., the discard mortality rate, DMR). The IPHC's harvest policy specifies that commercial discard mortality of halibut 26 inches and longer (O26), including O32 halibut (32 inches in length and longer) and halibut between 26 and 32 inches (U32/O26), is deducted from the total amount of allowable halibut harvest (total constant exploitation yield or TCEY) to determine the annual commercial halibut catch limits (fishery constant exploitation yield or FCEY) for each IPHC regulatory area. U26 halibut commercial discard mortality is accounted for in the IPHC's annual stock assessment and in the IPHC's harvest policy, which sets exploitation rates for each IPHC regulatory area. The division between U26 and O26 halibut is designed standardize the treatment of halibut removal across all fisheries, given that personal use and sport fisheries are factored into the calculation of catch limits.

Due to changes in incentives with the IFQ Program surrounding QS and IFQ, highgrading was a potential concern in the fishery. To prevent this, regulations prohibit the discarding of any halibut of legal size (any halibut of 32 inches or greater, termed O32) from any catcher vessel with an IFQ permit holder onboard that still holds unused halibut IFQ for that vessel category in the IFQ regulatory area in which the vessel is operating. Under this rule, it is assumed that highgrading of legal-sized halibut do not occur in IPHC's estimation of removals. Additionally, the retention of any halibut less than 32 inches (U32) is also prohibited. A certain percentage of U32 halibut discarded this way are assumed to not survive.

IPHC estimates of the weight of commercial U32 halibut discards in the commercial halibut fishery are calculated through the IPHC fishery-independent setline survey (FISS) and through direct fishery observation in Regulatory Area 2B. Mortality of discarded U32 halibut is determined through encounter rates by year, area, and gear during the IPHC stock assessment. While some adjustments are made to setline survey data to make it comparable to catch rates reported in commercial fishery logbooks, it is inferred that the catch rate of U32 and O32 halibut at setline survey stations is similar to that of commercial fishery vessels. This estimated ratio of sublegal:legal is multiplied by the estimated commercial catch in each area to determine the estimated poundage of U32 discards. A DMR is then applied to this poundage to estimate U32 halibut mortalities in the fishery. A 16% DMR has been applied in the fishery since IFQ Program implementation (25% was used prior during derby fishing years). However, it should be noted that the current 16% DMR carries a measure of uncertainty and is the subject of ongoing discussion and research (Loher et al. 2022).

From 2016 through 2021, U32 discards in the directed commercial halibut fishery decreased beneath pre-IFQ levels (Figure 96). U32 commercial discards increased again in 2022 and 2023, to levels roughly matching pre-IFQ. U32 discards were led by Areas 3A and 3B, with 44% of all U32 commercial discards in the fishery occurring in Area 3A (Table 64).

Figure 96. Estimated Sublegal-sized (U32) Halibut Discard Mortality in the Halibut IFQ Fishery



Source: Developed by Northern Economics based on data from IPHC Fisheries Regulations and Data Services Branch (2024)

Table 64. Estimated Sublegal-sized (U32) Halibut Discard Mortality in the Halibut IFQ Fishery by Regulatory Area (Millions of Net Pounds)

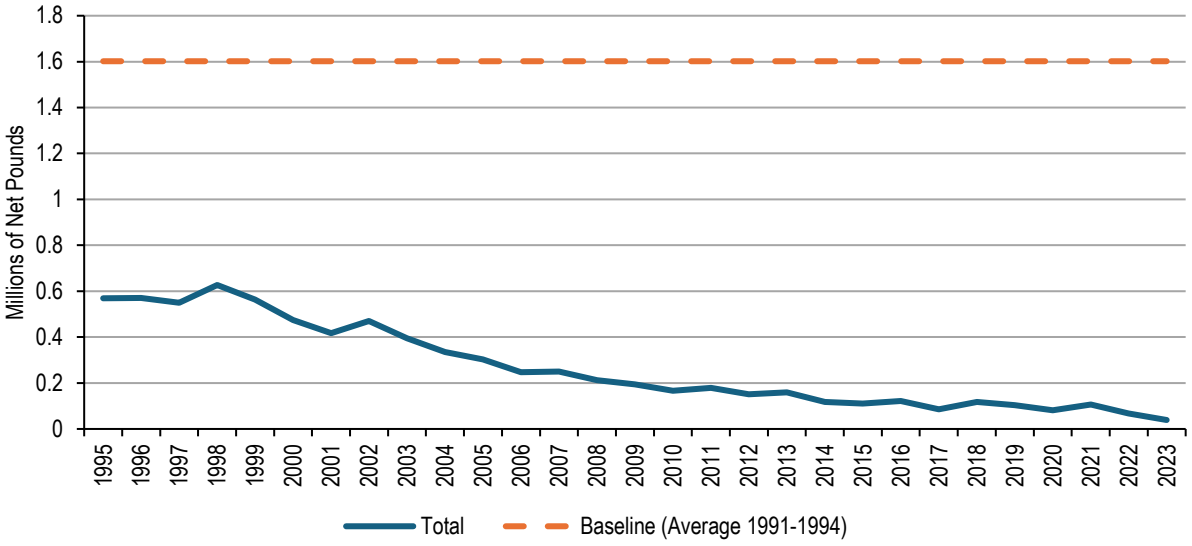
	IPHC Regulatory Area										
Year	2A	2B	2C	3A	3B	4A	4B	4C	4D	4E	Total
1991	0.015	0.167	0.179	0.512	0.291	0.037	0.019	0.01	0.008	0.001	**1.239**
1992	0.018	0.168	0.188	0.586	0.208	0.04	0.028	0.013	0.004	0.001	**1.253**
1993	0.015	0.225	0.217	0.511	0.186	0.039	0.024	0.012	0.004	0.001	**1.232**
1994	0.004	0.201	0.211	0.633	0.096	0.03	0.025	0.01	0.005	0.002	**1.218**
1995	0.003	0.19	0.102	0.295	0.049	0.017	0.014	0.006	0.001	0.001	**0.677**
1996	0.004	0.183	0.138	0.369	0.062	0.021	0.013	0.014	0.013	0.002	**0.82**
1997	0.005	0.256	0.153	0.518	0.197	0.033	0.02	0.022	0.022	0.005	**1.23**
1998	0.008	0.278	0.194	0.537	0.237	0.048	0.037	0.017	0.018	0.002	**1.375**
1999	0.006	0.282	0.17	0.433	0.253	0.034	0.047	0.014	0.015	0.002	**1.255**
2000	0.008	0.163	0.165	0.43	0.33	0.063	0.038	0.003	0.004	0.001	**1.204**
2001	0.012	0.21	0.196	0.397	0.452	0.103	0.047	0.005	0.005	0.001	**1.429**
2002	0.009	0.168	0.15	0.519	0.485	0.085	0.021	0.003	0.004	0.001	**1.445**
2003	0.028	0.311	0.178	0.623	0.615	0.088	0.026	0.003	0.007	0.001	**1.881**
2004	0.015	0.279	0.347	0.7	0.705	0.063	0.023	0.004	0.008	0.001	**2.145**
2005	0.034	0.292	0.316	0.563	0.557	0.133	0.012	0.005	0.026	0.004	**1.941**
2006	0.046	0.574	0.426	0.683	0.468	0.099	0.009	0.007	0.034	0.005	**2.35**
2007	0.03	0.505	0.353	0.92	0.439	0.134	0.019	0.007	0.037	0.008	**2.451**
2008	0.036	0.434	0.285	0.955	0.677	0.152	0.019	0.017	0.062	0.014	**2.652**
2009	0.051	0.336	0.297	1.158	0.788	0.147	0.012	0.013	0.045	0.009	**2.855**
2010	0.026	0.276	0.256	1.472	0.884	0.129	0.036	0.016	0.044	0.008	**3.146**
2011	0.02	0.258	0.082	0.91	0.765	0.141	0.037	0.035	0.097	0.02	**2.366**
2012	0.018	0.209	0.089	0.594	0.517	0.088	0.036	0.016	0.041	0.009	**1.617**
2013	0.015	0.199	0.091	0.534	0.388	0.064	0.03	0.016	0.03	0.008	**1.376**
2014	0.013	0.231	0.116	0.449	0.323	0.031	0.048	0.014	0.026	0.005	**1.258**
2015	0.025	0.231	0.117	0.52	0.215	0.073	0.036	0.014	0.024	0.003	**1.258**
2016	0.032	0.212	0.121	0.392	0.233	0.048	0.054	0.015	0.036	0.006	**1.149**
2017	0.012	0.173	0.083	0.356	0.233	0.056	0.03	0.007	0.013	0.002	**0.966**
2018	0.014	0.126	0.047	0.279	0.206	0.065	0.019	0.01	0.016	0.002	**0.784**
2019	0.024	0.134	0.068	0.335	0.156	0.095	0.038	0.02	0.043	0.006	**0.917**
2020	0.032	0.15	0.062	0.201	0.099	0.076	0.033	0.004	0.059	0.004	**0.72**
2021	0.062	0.154	0.09	0.381	0.143	0.058	0.031	0.004	0.014	0	**0.937**
2022	0.034	0.176	0.138	0.648	0.262	0.041	0.003	0.015	0.045	0.001	**1.363**
2023	0.094	0.187	0.106	0.564	0.235	0.03	0.003	0.012	0.037	0	**1.269**

Source: Developed by Northern Economics based on data from IPHC Fisheries Regulations and Data Services Branch (2024)

Information on regulatory discards of O32 halibut is collected through the IPHC logbook program and summarized annually by the IPHC. Since the implementation of the IFQ Program, regulatory discards only occur if an IFQ holder fully harvests their IFQ during their last fishing trip of the year.

Given the 10% overage-underage provision, participants rarely exceed their quota limits requiring them to make regulatory discards. When overages do occur, they are generally not reported to be substantial. Discards of O32 halibut in in the halibut IFQ fishery have decreased significantly since the implementation of the IFQ Program (Figure 97) and have continued to generally decrease through 2023 (Table 65).

Figure 97. Estimated Legal-sized (O32) Halibut Discard Mortality in the Halibut IFQ Fishery



Source: IPHC (2024b)

Table 65. Estimated Legal-sized (O32) Halibut Discard Mortality in the Halibut IFQ Fishery (Millions of Net Pounds)

	IPHC Regulatory Area										
Year	2A	2B	2C	3A	3B	4A	4B	4C	4D	4E	Total
1991	0.01	0.109	0.427	1.043	0.409	0.127	0.079	0.008	0.037	0	**2.249**
1992	0.021	0.09	0.262	0.818	0.207	0.083	0.049	0.018	0.021	0	**1.571**
1993	0.014	0.115	0.193	0.46	0.084	0.068	0.034	0.01	0.018	0	**0.995**
1994	0.014	0.077	0.196	1.068	0.101	0.055	0.039	0.014	0.027	0	**1.592**
1995	0.013	0.063	0.08	0.304	0.028	0.059	0.017	0.003	0.002	0	**0.569**
1996	0.018	0.039	0.093	0.278	0.036	0.052	0.04	0.011	0.003	0	**0.571**
1997	0.009	0.05	0.082	0.198	0.09	0.05	0.044	0.019	0.007	0	**0.55**
1998	0.043	0.069	0.079	0.261	0.085	0.041	0.018	0.011	0.021	0	**0.627**
1999	0.015	0.053	0.109	0.169	0.089	0.057	0.041	0.015	0.015	0	**0.563**
2000	0.024	0.045	0.076	0.151	0.091	0.028	0.053	0.007	0	0	**0.475**
2001	0.041	0.044	0.046	0.113	0.048	0.062	0.042	0.009	0.011	0	**0.417**
2002	0.018	0.037	0.051	0.209	0.058	0.047	0.045	0.004	0.001	0	**0.47**
2003	0.024	0.045	0.038	0.16	0.051	0.054	0.02	0.003	0.001	0	**0.395**
2004	0.012	0.055	0.036	0.128	0.028	0.047	0.019	0.004	0.005	0	**0.335**
2005	0.009	0.042	0.053	0.115	0.034	0.034	0.013	0.002	0	0	**0.303**
2006	0.022	0.056	0.033	0.076	0.02	0.021	0.007	0.001	0.009	0	**0.247**
2007	0.009	0.05	0.032	0.099	0.025	0.019	0.013	0	0.002	0	**0.25**
2008	0.01	0.032	0.02	0.094	0.006	0.017	0.024	0.001	0.009	0	**0.213**
2009	0.004	0.024	0.02	0.063	0.019	0.016	0.034	0.002	0.01	0	**0.194**
2010	0.002	0.031	0.018	0.055	0.021	0.014	0.014	0.001	0.011	0	**0.167**
2011	0.008	0.036	0.013	0.054	0.01	0.028	0.021	0.002	0.006	0	**0.179**
2012	0.015	0.021	0.033	0.051	0.011	0.007	0.009	0.001	0.003	0	**0.151**
2013	0.024	0.016	0.039	0.05	0.006	0.017	0.004	0.002	0.001	0	**0.159**
2014	0.008	0.02	0.021	0.045	0.004	0.007	0.009	0	0.003	0	**0.117**
2015	0.009	0.02	0.018	0.042	0.006	0.01	0.002	0.001	0.003	0	**0.111**
2016	0.009	0.025	0.023	0.037	0.008	0.006	0.003	0	0.005	0.005	**0.122**
2017	0.007	0.012	0.024	0.024	0.007	0.009	0.002	0.001	0	0	**0.086**
2018	0.009	0.018	0.028	0.037	0.01	0.007	0.007	0.002	0.001	0	**0.118**
2019	0.001	0.008	0.02	0.038	0.011	0.012	0.007	0.001	0	0.005	**0.104**
2020	0.004	0.015	0.018	0.02	0.008	0.006	0.004	0	0.006	0	**0.081**
2021	0.004	0.033	0.021	0.025	0.009	0.009	0.001	0.002	0.002	0	**0.106**
2022	0.001	0.014	0.021	0.017	0.009	0.002	0.003	0.001	0	0	**0.067**
2023	0.006	0.005	0.007	0.006	0.005	0.004	0.002	0.002	0.001	0	**0.039**

Source: IPHC (2024b)

Size-at-age Changes

The 2016 IFQ Program Review noted a decreasing size-at-age trend that had slowed and had become relatively stable. As of 2023, individual size-at-age appeared to be increasing for younger halibut (<14 inches) and was relatively stable for older fish in most regulatory areas. While halibut changes to size-at-age occur slowly, this could have implications for overall yield if this pattern persists long-term into older ages. Currently, no changes to the implementation of the IFQ Program have been made reflecting changes in halibut size-at-age.

Recruitment and Pacific Decadal Oscillation

Much of the uncertainty around the relationship between the Pacific Decadal Oscillation (PDO), environmental conditions, and halibut recruitment strength noted in the 2016 IFQ Program Review remains, though warm phases appear to correlate with concurrent halibut recruitment (Clark and Hare 2002). While positive (warm) PDO values were observed from 2014 through 2019, the fishery has been experiencing negative (cool) PDO values since 2020. However, due to the 6-to-8-year lag between a halibut cohort and observed abundance in the survey and fisheries, the effect of the current negative PDO values is uncertain. Additionally, anomalous environmental indicators have been recorded in several fisheries, making increasing uncertainty around how comparable current PDO conditions are to previous PDO observations (Litzow et al. 2020). While it will be several more years before recruitment from 2015 and subsequent years can be estimated, positive PDO values do not seem to have supported a strong recruitment class in 2014.

Halibut Distribution and Future Environmental Conditions

Pacific halibut have a wide distribution and a complex life history, making them potentially vulnerable to climate change impacts. In particular, studies have begun examining how projected climate scenarios affect species distribution models, particularly around temperature and dissolved oxygen. While initial results suggest that Pacific halibut may be sensitive to changes in dissolved oxygen and relatively tolerant to changes in temperature increases. Future decreases in dissolved oxygen in the near-bottom habitats inhabited by small halibut could result in moderate decreases in abundance, though impacts on larger halibut are less certain. Under these conditions, relative abundance of Pacific halibut is projected to decrease in British Columbia (Thompson et al. 2023). While this study has not been conducted in Alaska-specific waters, similar environmental changes could impact Alaska halibut stocks.

2.11.2 Current Sablefish Stock

Alaska sablefish are managed as a single stock unit in the BSAI-GOA and under Tier 3 of the NPFMC harvest control rule, which aims to maintain the population at $B_{40\%}$. The official catch estimate for the most recent complete year (2022) was 26,900 t, which is below the OFL of 34, 500 t. As of the 2023 stock assessment, SSB was at $B_{52\%}$, and the stock is projected to be at $B_{70\%}$ by 2025Additionally, the

female spawning biomass combined across areas has increased since 2016 (86, 471 t), reaching an estimated 185,079 t, equivalent to $B_{62\%}$, meaning fishing mortalities associated with ABC and OFL come from the Tier 3a control rule. Currently, no overfishing is considered to be occurring in the IFQ sablefish fishery and is not considered to be overfished or approaching an overfished condition.

2.11.2.1 IFQ Management Impacts on Sablefish

Deadloss from Lost Gear

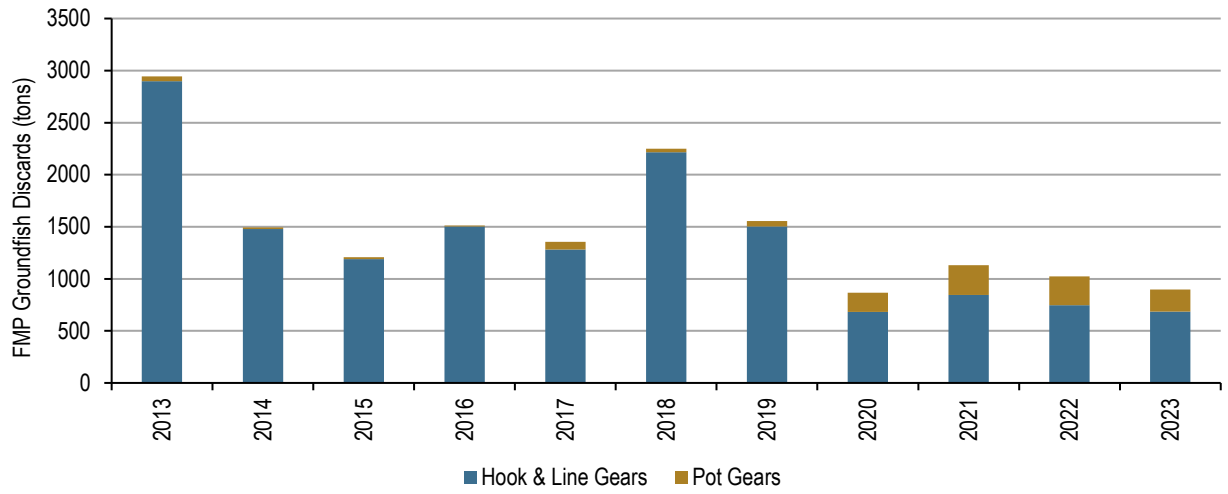
As noted in previous reviews, the sablefish fishery has historically had less intense fishing pressures than the halibut fishery. Changes under the IFQ program which aimed to decrease fishing pressures for halibut were expected to have less pronounced impacts on sablefish. As a result, data estimates of deadloss from lost or abandoned gear are not currently available.

Bycatch Loss of Non-target Species

While the IFQ sablefish fleet was expected to benefit from higher retention under the IFQ program, these benefits were expected to be less than in the halibut fishery, which was subject to much shorter and intensive fishing seasons pre-IFQ. As noted in the 2016 Program Review, the fishery FMP groundfish average discards dropped by nearly half (48%) from the 1995-2015 period compared to the pre-IFQ baseline (1992-1994), with the highest discards occurring in the hook & line sablefish fisheries. This decrease in discards matched expectations and aligned with the program's biological management goals.

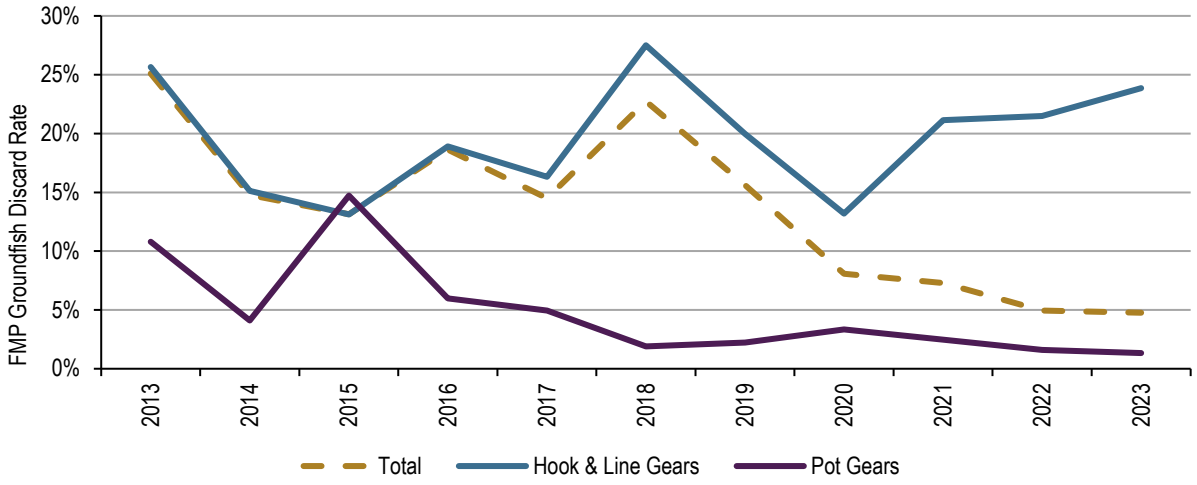
Since 2015, discards of FMP groundfish have continued to decrease, as seen in Figure 98. Discards in the IFQ sablefish fleet are estimated based on observer and electronic monitoring (EM) data. NMFS extrapolates non-sablefish discard data from observed vessels to the rest of the fleet using the discards of observed species to estimate total fleet-wide discards. This estimated total weight of each species is then multiplied by a specific DMR established for each species to obtain the estimated discard mortality of that species in the fishery. Hook and line gears continue to be the largest source of FMP groundfish discards in the fishery (Figure 98), though since 2018, these discards have been declining. This coincides with the implementation of the rule allowing the use of pot gear in the fishery in 2017 and a shift in the primary gear used in the fishery, with hook & line usage decreasing from 85% in 2018 to 18% in 2023 (Figure 44). Similarly, discards from pot gear have increased since 2018, as pot usage has increased from 15% in 2018 to 82% in 2023. Pot gear is a "cleaner" gear than hook & line for sablefish. This is reflected by the total discard rate of FMP groundfish in the fishery, which has continued to decrease since 2018 (Figure 99). Since 2020, when pot became the primary gear in the fishery (Figure 44), the average discard rate of FMP groundfish has dropped to 6.3%, compared to an average 17.8% from 2013-2019.

Figure 98. Discards of All FMP Groundfish in the Sablefish IFQ Fleet (in metric tons)



Developed by Northern Economics based on data from AKFIN (2024)

Figure 99. Discard Rate of All FMP Groundfish in the Sablefish IFQ Fleet



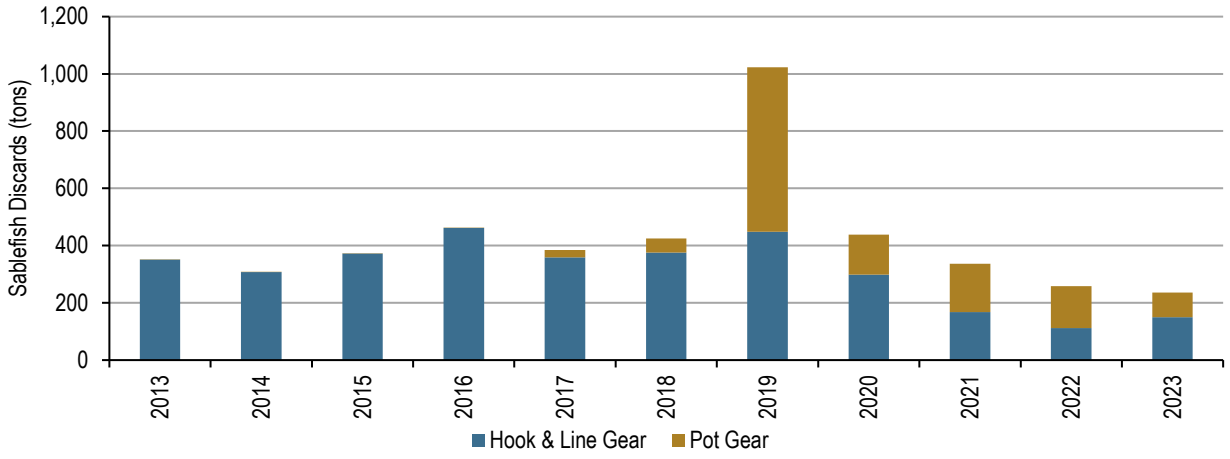
Source: Developed by Northern Economics based on data from AKFIN (2024)

Discards of Sablefish in the IFQ Fleet

Discards of sablefish in the sablefish IFQ fleet are presented by gear type in Figure 100 and Figure 101. Discard rates are calculated as the sum of all discarded sablefish against the weight of sablefish retained by the IFQ fleet. For full-coverage CPs, discarded sablefish is estimated from observer and EM data while prior to 2016, estimates for partial-coverage were derived from industry-reported discards. However, since the restructuring of the observer program in 2013, more IFQ vessels have

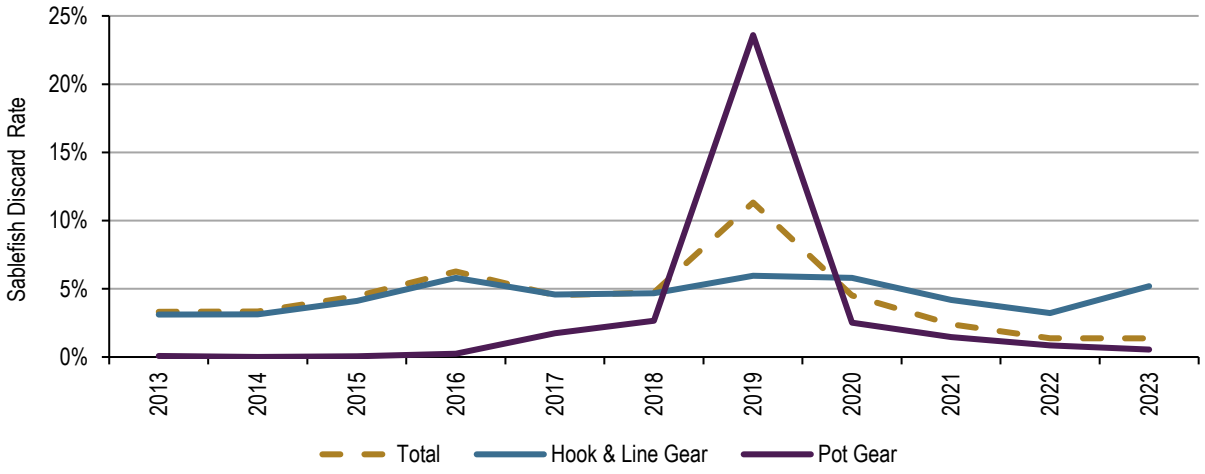
required mandated observer coverage, allowing for more direct generation of discard estimates. All estimated at-sea discards of sablefish are assumed to have 100% mortality.

Figure 100. Discards of Sablefish in the Sablefish IFQ Fleet



Source: Developed by Northern Economics based on data from AKFIN (2024)

Figure 101. Discard Rate of Sablefish in the Sablefish IFQ Fleet



Source: Developed by Northern Economics based on data from AKFIN (2024)

Since 2019, which was marked by a spike in both sablefish discards and discard rates, discards of sablefish in the IFQ fleet have decreased. This is likely attributable to the increased usage of pot gear in the sablefish IFQ fishery. From 2013-2023, while hook & line estimated discard rates have shown some interannual variation, ranging from 3.1%-5.9% (Figure 101). As discussed in the previous review, part of this variability may be due to highgrading in response to changes in ex-vessel prices or changes in operating costs. In comparison (excluding 2019), estimated discards of sablefish using pot gear ranged from 0.0%-2.5% during the same period. Decreases in the fleet-wide discard rate

reflect the aforementioned increases in the usage of pot gear in the fishery, as do the decreasing hook & line sablefish discards and overall decrease of sablefish discards in the fishery.

The apparent 2019 spike in sablefish discards is attributable solely to estimated discards of sablefish in the GOA pot gear fishery. Discard of sablefish by directed IFQ vessels is currently prohibited unless a vessel possesses only halibut IFQ. However, data from observers and EM show that some discards of prohibited sablefish by catcher vessels do still occur. If such discards are observed, these discard rates are calculated and applied to other, unobserved catcher vessels. Such a rate was applied to unobserved catcher vessels in 2019 that may not have been discarding and does not necessarily reflect the amount of sablefish discarding that was occurring that year (NPFMC 2021).

2.12 In-Season Management

This section was provided by NMFS Alaska Region and covers the monitoring, enforcement, cost recovery, and administrative aspects of the IFQ Program with a particular focus on program in-season management challenges since the previous review.

2.12.1 Summary of Recommendations

In the subsections below, NMFS included several recommendations for particular changes that could aid in administration and smooth function of the program. The recommendations are listed in this subsection with references to the subsection with additional information.

- NMFS recommends initiating a regulatory change to establish a minimum age to be eligible to receive IFQ or QS by transfer based on all applicable laws. This would allow the Council and NMFS to consider a range of options for what the minimum age should be for an individual to receive IFQ or QS by transfer under the IFQ Program (Section 2.12.5.2).

- NMFS recommends that the Council consider if changes to the survivorship transfer privilege regulations at 50 CFR 679.41(k) are necessary to govern what happens to QS held by a beneficiary beyond 3-years (Section 2.12.5.5).

- NMFS recommends initiating a regulatory change to adjust the timing of the annual cost recovery process to address the current time crunch for this annual process (Section 2.12.6.4).

2.12.2 Monitoring

Monitoring of the IFQ Program includes tools for ensuring compliance with fisheries regulations, safety standards, and collection of biological data. These include dockside monitoring, timely landings reporting, regulatory harvesting limits, IFQ leasing limits and use caps, as well as vessel monitoring systems (VMS), logbooks and the North Pacific Observer Program (Observer Program).

Detailed information on each of these monitoring elements is provided in the previous IFQ Program review (NMFS 2016). This subsection focuses largely on updates in the Observer Program as changes have occurred and new monitoring methods approved since the 2016 IFQ Program Review. As no substantial changes have occurred for other IFQ Program monitoring tools (e.g. landing reports, VMS, etc.) since 2016, they are not discussed in detail. The Observer Program provides the regulatory framework and support infrastructure for stationing observers and EM systems to collect data necessary for the conservation, management, and scientific understanding of the commercial Aleutian Islands, Bering Sea, and Gulf of Alaska groundfish and Pacific halibut fisheries.

The most significant monitoring change that has occurred within the halibut and sablefish IFQ Program since the 2016 IFQ Program Review is the ability for vessels to use EM in lieu of observer coverage. This change occurred in 2018 after NOAA Fisheries published regulations to include EM deployment as a component of the North Pacific Groundfish and Halibut Observer Program (Observer Program) (82 FR 36991; August 8, 2017). An additional change occurred in 2017 when small catcher/processors meeting specific criteria were allowed to opt into the partial coverage category of the Observer Program (82 FR 36991; August 8, 2017).

Observer coverage was not an original component of the IFQ Program when the program began in 1994. The only IFQ vessels subject to observer coverage requirements prior to a 2013 rule were vessels greater than or equal to 60 feet LOA targeting sablefish (NPFMC and NMFS 2016) and a very specific monitoring requirement for observer coverage when a vessel wanted to fish in multiple areas and retain more catch than their total quota in any one area. In 2013, NOAA Fisheries changed how observers in the partial coverage category are deployed, how observer coverage in the partial coverage category is funded, and which vessels and processors must have some or all of their operations observed. These changes increased the statistical reliability of data collected by the program, addressed cost inequality among fishery participants, and expanded observer coverage to previously unobserved fisheries, including the IFQ fishery (77 FR 70062; November 21, 2012). Data collection through the Observer Program provides a reliable and verifiable method for NMFS to gain fishery discard and biological information on fish, and data concerning seabird and marine mammal interactions with fisheries. These data contribute to the best available scientific information used to manage the halibut and sablefish fisheries in the EEZ off Alaska.

The restructured Observer Program established two coverage categories: full and partial. Full observer coverage is required on large catcher/processors and when catcher vessels are participating in AFA pollock, Central GOA Rockfish program, CDQ or other fisheries with a transferable PSC limit. Full coverage trips are either monitored by 1 or 2 observers at sea, or by an EM system at sea and an observer at the processing plant receiving the ship's catch (NMFS 2023b). Vessels and processors in the partial coverage category are assigned observer or EM coverage according to the scientific sampling plan described in the Annual Deployment Plan (ADP) developed by NMFS in consultation with the Council. Since 2013, observers have been deployed in the partial coverage category using established random sampling methods to collect data on a statistically

reliable sample of fishing vessels in that category. Generally, catcher vessels fishing in the IFQ Program fall into the partial coverage category. Owner/operators on vessels in partial coverage declare each trip in the Observer Deploy and Declare System (ODDS) database and work directly with a NMFS contracted observer provider company or EM provider to arrange for coverage if the trip is selected. Selection rates in partial coverage are based on gear type, and between 2017 and 2023, partial coverage selection rates for observer coverage ranged between 11% and 19% for hook-and-line vessels delivering shoreside, and between 4% and 18% for pot vessels delivering shoreside (AFSC and AKRO 2024).

2.12.2.1 Zero Coverage

Since 2013, NOAA Fisheries has defined a "zero coverage" category as a component of partial coverage through the ADP. Vessels under 40' LOA using fixed gear and vessels using only jig gear are in zero coverage and have no chance of being selected for coverage. The zero coverage category exists for these vessels due to limited resources and deck space available to any potential observers. Between 2017 and 2023, 30% to 36% of trips that landed IFQ were taken by vessels in the Zero Coverage pool. To estimate discards that occur in the portion of the fleet without observers or EM, NMFS uses data from vessels over 40' LOA fishing in the same post-strata in estimation. Specifically, data from the closest aggregation pool are used starting with data from the same NMFS reporting area for fishing activity in the same three week period. These methods are documented in detail in Cahalan et al 2014. Since there is no direct monitoring data gathered for this segment of the fleet, NMFS has recommended that vessels less than 40' LOA be considered for the EM selection pool in the future (AFSC and AKRO 2021). In February 2018, the Council reviewed a discussion paper on EM prioritization and recommended that development of EM on trawl vessels be considered a higher priority than implementation of EM on fixed gear vessels less than 40' LOA. Since that time, NMFS and the Council have focused on developing EM for trawl vessels fishing with pelagic trawl gear and no additional work has been conducted to develop EM systems for vessels under 40' LOA.

Another discussion of Zero Coverage was raised by the Council's Partial Coverage Fisheries Monitoring Advisory Committee (PCFMAC) as part of the cost efficiency analysis in the draft 2024 Annual Deployment Plan (ADP). Specifically, the PCMFAC discussed changing the definition of the Zero Coverage pool with the idea that adding more vessels to zero coverage could be a potential opportunity for cost savings. The definition of Zero Coverage needs to use criteria that are identified ahead of time and are predictable from year to year. Currently, vessels are placed in Zero Coverage based on the vessel's size and gear.

Increasing the number of vessels in Zero Coverage would reduce the number of monitored vessels, thereby increasing the selection rate on the remaining vessels, but potentially not changing the total number of monitored trips. However, data quality would be reduced. This happens because as more vessels move into Zero Coverage, the data being collected on monitored vessels is less representative of true fishing behavior. Removing vessels that take very few trips per year from the EM pool and

adding them to Zero Coverage could improve the efficiency of the EM program. However, the impact of these changes on observer deployment rates is unclear. A large number of vessels would need to be moved to Zero Coverage to substantially increase monitoring rates in other strata. The final 2024 ADP did not change the definition of zero coverage and NMFS did not recommend adding additional boats to this category for the draft 2025 ADP (AFSC and AKRO 2024b).

2.12.2.2 Small Catcher/Processors

Starting in 2017, small catcher/processors that meet specific criteria were given the option to request to be put into partial observer coverage category (81 FR 17403; March 19, 2016). Under this final rule, the owner of a non-trawl catcher/processor can choose to be in the partial observer coverage category, on an annual basis, if the vessel processed less than 79,000 lb. (35.8 mt) of groundfish on an average weekly basis in a particular prior year, as specified in this final rule. This change provided a relatively limited exception to the general requirement that all catcher/processors are in the full observer coverage category, and maintains the full observer coverage requirement for all trawl catcher/processors and catcher/processors participating in a LAPP that requires full observer coverage. Allowing these vessels to be placed in the partial observer coverage category would minimize the costs of observer coverage for vessel owners. The Council did not anticipate this action would impair data quality because the overwhelming majority of groundfish production remains in the full coverage category. Since 2017 between two and eight catcher/processors have requested and been approved by NMFS to be in partial coverage. All of these vessels participate in the IFQ fishery.

2.12.2.3 Electronic Monitoring

The Council established a high priority goal to integrate EM into the Observer Program for the fixed gear small-boat groundfish and halibut fisheries around the time that coverage began in the IFQ Program (NPFMC AND NMFS 2016). Many vessel owners and operators new to the Observer Program were opposed to carrying an observer due to limited space on board or in the vessel's life raft. Some vessel owners and operators in non-trawl fisheries including hook and line or pot fisheries advocated for the use of EM instead of having an observer onboard their vessels (77 FR 70062; November 21, 2012). EM is defined as a network of equipment that uses a software operating system connected to one or more technology components, including, but not limited to, cameras and recording devices to collect data on catch and vessel operations (50 CFR 679.2).

In the lead-up to regulatory implementation, the Council and NMFS were actively engaged in developing EM as a tool to collect fishery data in longline and pot fisheries. NMFS worked alongside industry participants to conduct research and plan to integrate EM as a monitoring tool for the collection of scientific data on the small vessel fleet.

Vessel owners and operators in the partial coverage category of the Observer Program are now allowed to "opt in'' to the EM selection pool. Each year, vessel owners or operators may request to

join or leave the EM selection pool through an application in the Observer Declare and Deploy system (ODDS). Prior to fishing, all EM vessels are required to submit and follow a NMFS-approved Vessel Monitoring Plan (VMP) for each gear type used while in the EM strata (NMFS 2023b). Video collected from the EM program is sent to the Pacific States Marine Fisheries Commission (PSMFC) for review and then incorporated into the Catch Accounting System (CAS) for catch estimation to support in-season management of the fisheries and for use in fishing mortality estimates in stock assessments. EM video reviewers are trained by a PSMFC staffer working with the Observer Program on Alaska species reporting conventions. The reviewers are instructed to record species to the lowest identifiable taxonomic level or grouping as required by the Alaska Region (AFSC and ARO 2024). Any problems encountered during EM review are logged in the EM Service Provider Application / Observer Declare and Deploy System (EMSP ODDS application) and PSMFC database. Every logged issue in the EMSP ODDS application results in an automated email being sent to the associated vessel with instructions on how to fix the problem. The EM Service Provider also contacts the vessel to resolve the issue, including phone calls or site visits if needed. Logged issues may result in trip logging limitations, a waiting period of 72 hours if appropriate, notifications by email of all issues, contact by the EM Service Provider, OLE contact or actions, and/or removal from the EM program (AFSC and ARO 2024b). More detailed information on EM data aboard fixed gear vessels is available in the annual North Pacific Observer Program Reports (see references section).

Between 2017 and 2023, 11% to 21% of trips that landed IFQ were taken by vessels in the EM pool (Table 66). When a vessel is in the EM pool their trips are randomly selected for coverage, which means the vessel is required to operate their EM system during the trip, at a rate of 30%. Additionally, as shown in Figure 102, a smaller percentage of trips within the EM pool had video reviewed to enable data to be used by CAS for inseason management. As the EM program was developed (prior to regulations being implemented), data from EM vessels were not used by CAS until 2018 for hook-and-line vessels and 2019 for pot vessels, which helps explain the low percentages of trips monitored in 2017 and 2018 for the EM pool.

The percentage of all trips that landed IFQ were monitored within each of the three monitoring pools: EM, observer coverage (OB), and zero selection (ZE), by year (Table 66). For the EM pool, a monitored trip reflects a trip for which some video was reviewed.

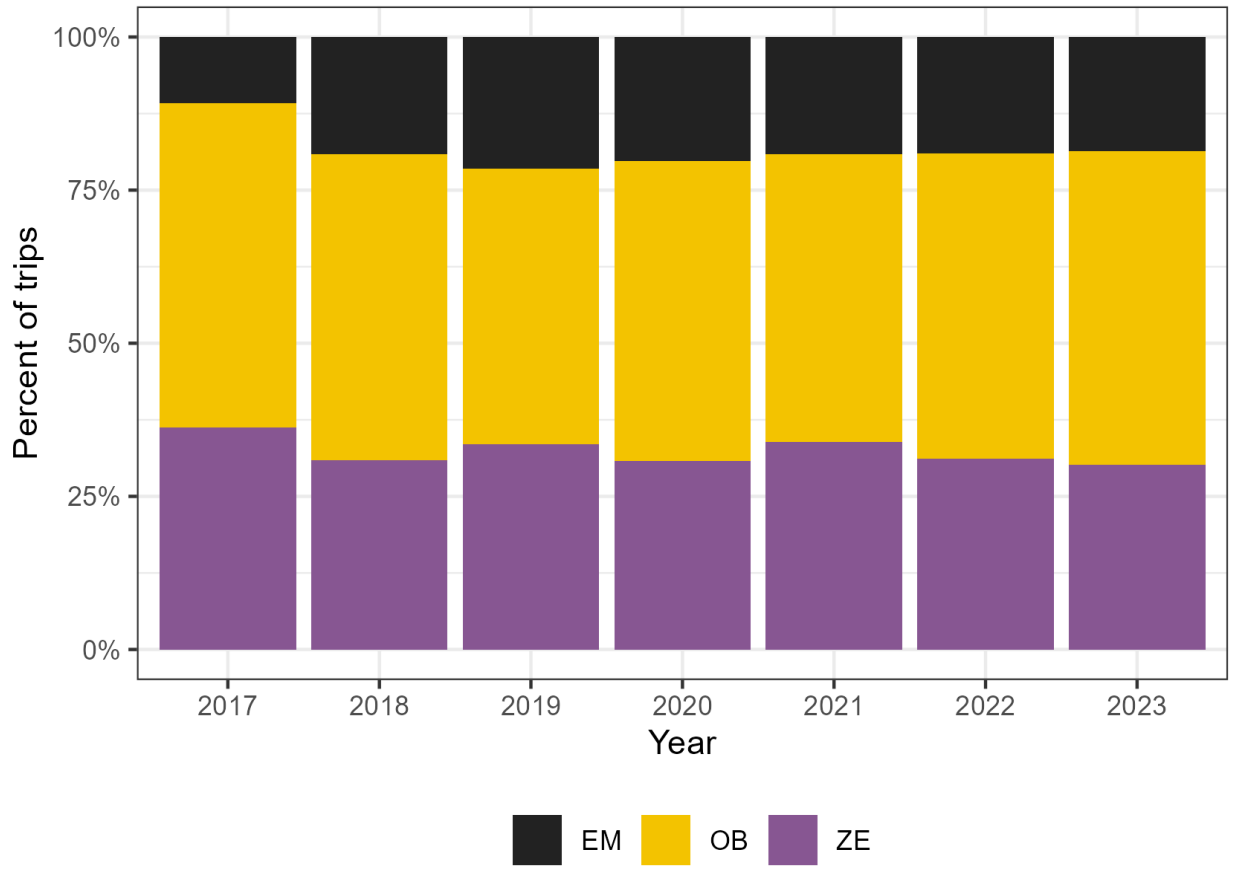
Table 66. Percent of IFQ Trips Monitored

	Percent of trips monitored		
Year	EM	OB	ZE
2017	0%	6%	0%
2018	4%	8%	0%
2019	7%	8%	0%
2020	6%	4%	0%
2021	5%	8%	0%
2022	4%	8%	0%
2023	4%	10%	0%

Source: NMFS

Figure 102 shows by year the percent of all trips (monitored and unmonitored) that landed IFQ within each of the three monitoring pools: EM, OB, and ZE.

Figure 102. Percent of Trips Monitored



Source: NMFS

2.12.2.4 IFQ Fishing in Multiple Areas

The authorization of EM has allowed exceptions for participating vessels fishing IFQ in separate regulatory areas. If a vessel is part of the EM selection pool and is selected for EM coverage for that

fishing trip, the vessel owner or operator is permitted to retain halibut or sablefish in excess of the total amount of unharvested IFQ or CDQ applicable to that vessel for the IFQ regulatory area in which the vessel is operating. For example, a vessel with 5,000 lb. of IFQ available in 4A and 3,000 lb. of IFQ available in 4C could begin fishing in 4C and retain up to 3,000 lb. of halibut in 4C and then move over to area 4A. Without an onboard observer or an EM system in place, that vessel could only fish 2,000 lb. of their IFQ available in 4A because anything more would put them over the 5,000 pounds of IFQ available. If that vessel opted to fish area 4A first and retained more than 3,000 lb. in 4A, it could not move to 4C. However, vessels with an observer or an EM system onboard would be allowed to harvest all 8,000 lb. from both areas combined in one trip. A vessel in the EM selection pool that complies with the requirements of § 679.51(f)(6) and maintains the applicable daily logbook may retain halibut or sablefish in excess of the total amount of unharvested IFQ or CDQ applicable to that vessel for the IFQ regulatory area in which the vessel is operating and that is currently held by all IFQ or CDQ permit holders aboard the vessel.

2.12.2.5 Use of Pot Gear

In December 2016, NMFS published a final rule authorizing the use of longline pot gear in the Gulf of Alaska sablefish IFQ fishery through Amendment 101 to the GOA FMP, effective January 27, 2017 (81 FR 95435, December 28, 2016). This rule was issued in response to whales removing or damaging sablefish (known as depredation) caught on hook and line gear. Since then, lightweight and collapsible "slinky" pots have gained popularity in the fishery with usage increasing largely due to their ability to be utilized aboard vessels with limited deck space or hydraulic power (Sullivan et al 2022). Beginning in 2022 observers began reporting pot gear specifications to quantify gear types and configurations in the fishery. The amount of catch in each pot type (hard or slinky) was collected for the first time in 2022. As of October 28, 2022, slinky pots made up 33% of the retained catch in the AI, 42% in the BS, 19% in the WG, 67% in the CG, 85% in WY, and 93% in EY/SE. Along with the increase in use of longline slinky pots came the need for monitoring efforts, most notably EM, to adapt. Historically, gear codes within eLandings were not available to distinguish slinky pots from rigid framed pot gear (Goethel et al 2022).

Regarding EM, the increased use of slinky pots in the sablefish fishery has impacted EM video review. Pot gear also requires an additional camera and different catch handling rules than hook and line gear. Some new entrants into the pot fishery that switched to longline slinky pots caused data loss and degradation as they were not aware of how catch handling differed from longlining and that a separate VMP is required for pot fishing. The most commonly logged EM issue on pot vessels has been 'Catch handling inconsistent with VMP' (AFSC and AKRO 2024a). Catch handling by the crew impacts data quality, as crew must clear each pot and process catch prior to the next pot coming onboard. Organisms also must be handled in such a way that allows a view and/or count by the video reviewer. This may slow fishing efforts but must be done to comply with the VMP. Bias may also exist towards pots with lower catch if reviewers move past pots where organisms cannot be counted and only review pots that can be counted. Once a pot is successfully counted, the intended sample frame

is resumed. However, in 2023 it was noted that issues logged for non-trawl EM trips by video camera reviewers generally have trended downward since 2020. This improvement in the EM fixed gear program over the years is due to a deliberate process of continued outreach, agency cooperation internally and externally, and hard work by all participants. For available data in 2023, just 34% of longline trips (including IFQ and non-IFQ fisheries) had at least one issue reported by PSMFC reviewers compared to 54.6% in 2020, 46.2% in 2021, and 37.9% in 2022. 44.8% of pot vessels (including IFQ and non-IFQ fisheries as well as longline and single) had at least one issue reported by PSMFC reviewers compared with over 80% in 2020, although this was up from 38.6% in 2022 (AFSC and AKRO 2024b).

EM video review of pot gear takes more time than hook-and-line, so the increase in the use of slinky pots has impacted video review times. NMFS is working to support additional reviewers to decrease the review time lag and to allow for longer review time needed by pot gear as well as working on review options that might reduce review times for pot gear (AFSC and AKRO 2024a).

2.12.2.6 Logbooks

Daily fishing logbooks (DFLs) are a requirement for all IFQ vessels over 60' LOA in the GOA and BSAI, catcher vessels less than 60' LOA fishing with longline pot gear in the GOA, and for catcher vessels less than 60' LOA harvesting CDQ or IFQ with pot gear in the BSAI (50 CFR 679.5 (c)). Logbooks are not only a valuable data source used in determining catch per unit effort and assessing stocks, but also for NOAA Office of Law Enforcement (OLE) and the U.S. Coast Guard (USCG) in monitoring compliance. There has been some confusion among the fleet that operates a vessel less than 60' LOA regarding logbook requirements for vessels fishing with longline pot gear. These vessels are required to maintain the logbook for all subsequent fishing trips in the IFQ fisheries and all groundfish trips using longline gear or longline pot gear for the entire calendar year. In addition, vessels less than 60' LOA deploying "slinky" pot gear for the first time may not be aware that "slinky" pot use may carry a logbook requirement or change the current logbook requirement for the remainder of the year. Daily Cumulative Production Logbooks (DCPL) are also required for catcher processors fishing for IFQ sablefish. Operators of any vessel of 26' LOA or greater fishing for Pacific halibut are required to use an International Pacific Halibut Commission (IPHC) Pacific halibut logbook or approved equivalent such as the DFL. Table 67 provides a visualization of the logbook requirements for IFQ Program participants.

Table 67. Logbook Requirements for IFQ Program Participants

Vessel Length	BSAI				GOA			
	Pot (all)		Longline/Hook-and-Line/ Jig/ Dinglebar/ Hand troll		Longline Pot		Longline/Hook-and-Line/ Jig/ Dinglebar/ Hand troll	
	Halibut	Sablefish	Halibut	Sablefish	Halibut	Sablefish	Halibut	Sablefish
<26'	CV LL/Pot DFL/ ELB	CV LL/Pot DFL/ ELB	N/A	N/A	CV LL/Pot DFL/ ELB	CV LL/Pot DFL/ ELB	N/A	N/A
26-60'	CV LL/Pot DFL/ ELB	CV LL/Pot DFL/ ELB	IPHC or approved ELB/ Alaska H&L/ ADFG LL-Pot/ CV LL/pot DFL/ ELB	N/A	CV LL/Pot DFL/ ELB	CV LL/Pot DFL/ ELB	IPHC or approved ELB/ Alaska H&L/ ADFG LL-Pot/ CV LL/pot DFL/ ELB	N/A
>60' (with FFP in EEZ)	CV LL/Pot DFL/ ELB	CV LL/Pot DFL/ ELB	CV LL/Pot DFL/ ELB	CV LL/Pot DFL/ ELB	CV LL/Pot DFL/ ELB	CV LL/Pot DFL/ ELB	CV LL/Pot DFL/ ELB	CV LL/Pot DFL/ ELB
CP	CP LL/Pot DCPL/ ELB (eLandings)	CP LL/Pot DCPL/ ELB (eLandings)	CP LL/Pot DCPL/ ELB (eLandings)	CP LL/Pot DCPL/ ELB (eLandings)	CP LL/Pot DCPL/ ELB (eLandings)	CP LL/Pot DCPL/ ELB (eLandings)	CP LL/Pot DCPL/ ELB (eLandings)	CP LL/Pot DCPL/ ELB (eLandings)

Note: FFP = Federal Fishing Permit, CP = Catcher Processor, CV = Catcher Vessel, LL = longline, DFL = Daily Fishing Logbook, ELB = Electronic Logbook, H&L = Hook and Line, DCPL = Daily Cumulative Production Logbook

Logbook information has been used to determine catch-per-unit-effort (CPUE) for IFQ fisheries, providing valuable data for stock assessments. However, completing the data-entry of paper logbooks is time consuming and expensive; due to funding issues and timing constraints, 2020 fixed gear fishery catch-per-unit-effort (CPUE) data from logbooks were unavailable for the 2021 sablefish stock assessment with implications for model components (Goethel et al 2021) and the absence of logbook derived CPUE data in future years could potentially impact the stock assessments for sablefish. One potential solution would be the adoption of electronic logbooks (eLogs) among vessels targeting IFQ sablefish. Increased adoption of eLogs could provide verifiable sablefish data while increasing the quality and usefulness of logbook data. ELogs also have the potential to be more cost efficient as data is entered once and uploaded in real time or upon return to port, providing additional information and benefits for fisheries management. Any vessel required to have a DFL/DCPL can substitute with an approved eLog although paper copies of eLogs must be printed in a legible, timely, and accurate manner (50 CFR 679.5(f)).

2.12.3 Enforcement

The NOAA Office of Law Enforcement (OLE) is primarily responsible for enforcing compliance with the IFQ Program regulations. OLE efforts are reinforced through joint enforcement agreements with the Alaska Wildlife Troopers (AWT) and the USCG. OLE conducts outreach and education efforts, vessel patrols at sea and investigates federal fishing violations to achieve compliance. This subsection focuses on enforcement efforts and provides updates and concerns related to the IFQ Program since the previous review. Detailed information on enforcement responsibilities and tools is provided in the 2016 IFQ Program Review.

OLE maintains a collaborative relationship with the Observer Program by investigating statements documenting potential violations submitted by observers and EM reviewers and through conducting annual operations in Dutch Harbor focused on observer-reported violations. Since 1990, observers have been required to accurately report any suspected violations that they witness in the form of statements. Statements are stored in an electronic database that is managed and maintained by the Fisheries Monitoring and Analysis Division of the Alaska Fisheries Science Center (FMA). OLE works closely with FMA and observer providers to address incidents impacting observer safety, sampling efforts and work environments. Enforcement personnel utilize observer statement data to track compliance trends and make subsequent adjustments to training, outreach and operations as required (AFSC and AKRO 2024a).

Historically, there have been various methods used to collect and store records of observer statements. Starting in October 2019, an updated interface and new database were co-developed by staff from FMA and OLE to address inefficiencies in these methods. Programming began in 2020 with financial support from the National Catch Share Program, and the new database system was deployed on July 19, 2023. The new database is maintained by FMA. More details on how the new database is improving the accuracy and timeliness of observer reporting of potential violations can be found in the 2023 annual observer report (AFSC and AKRO 2024b).

Table 68 shows shoreside and at-sea IFQ fisheries violations from 2016 through 2023. This includes violations detected both by OLE and the USCG. Data in this table is not standardized and annual variations in violations could be due to regulatory changes, OLE's staffing changes in various ports, or changes in USCG patrol and/or OLE's shoreside monitoring efforts. For example, the reduction in MRA overage violations beginning in 2020 through 2023 when compared with previous years can be attributed to required retention of rockfish (84 FR 52442, October 2, 2019). There was an increase in recordkeeping and reporting violations in recent years with 183 in 2021 and 123 in 2023. The increase in 2021 can be attributed in part to a logbook audit that found increased numbers of IFQ sablefish longline pot gear vessels not complying with Directed Fishing Logbook (DFL) requirements. OLE maintains that clear and consistent regulations are easier to understand and comply with. With new entrants deploying "slinky" pots to harvest sablefish, new (to the user) and inconsistent logbook requirements (across the IFQ Program, described in Table 67 above) likely create confusion and drive up inadvertent violations. Upward trends are also noted for violations related to fishing for IFQ without a permit/FFP not possessed, no VMS when required, gear violations, and prohibited species mishandling. More detailed information on Pacific halibut outreach and education, citations, violations and vessel boardings are provided in the annual IPHC National (United States of America) reports[16].

[16] The 2024 U.S. IPHC annual Report: https://www.iphc.int/uploads/2024/01/IPHC-2024-AM100-NR02-Rev_3-USA.pdf

Table 68. Shoreside and At-sea Fisheries Violations

Violation Type	2016	2017	2018	2019	2020	2021	2022	2023
Recordkeeping and Reporting (vessels and processors)	23	49	56	86	78	183	71	123
FFP/ IFQ Permit/ Cardholder not onboard	7	16	43	37	3	23	20	9
Fishing for IFQ without a permit/ FFP not possessed	7	5	3	9	10	10	22	27
No Prior Notice of Landing/ incorrect PNOL	5	9	8	20	19	19	12	14
Permit Holder not present for landing	1	2	-	1	2	5	1	7
Fail to Offload all fish	-	3	-	1	-	-	1	1
Quota fished on wrong class/size vessel	1	1	-	1	-	4	1	5
IFQ Overage	34	34	34	20	14	16	28	42
Vessel Cap Exceeded	2	2	1	2	-	2	1	3
No VMS (when required)	3	11	12	8	15	17	20	23
Gear Violations*	8	13	7	10	5	25	18	35
Seabird Avoidance insufficient	3	5	5	7	6	6	4	5
Closed Area fishing/ landing/ multi-area violations	-	-	-	2	2	1	5	6
Soak Time violations	-	-	1	3	2	3	2	5
Prohibited Species Mishandling	2	3	5	3	3	5	7	17
Retain Undersized Halibut	1	2	6	2	-	1	2	2
Illegal Discard IFQ Species	1	4	3	2	-	4	13	9
Fail to retain IR/IU (up to MRA)	8	8	12	2	2	4	12	23
MRA Overage	35	24	61	51	7	3	6	3
MCA Overage	-	-	-	-	5	2	5	1
MMPA (SSL incursions, etc.)	-	-	-	-	1	7	-	-
Guided Angler Fish (GAF)	-	4	-	-	3	-	-	-

*Note: * Gear violations include noncompliant gear, crab pots capable of catching halibut, improper markings*

Source: NOAA OLE Electronic Case Management System

Compliance issues with requirements to use Observer Deploy and Declare System (ODDS) continue to be a concern for OLE in recent years despite it being over 10 years post-implementation in 2013 (Table 69). Although the Fixed-Gear EM program has been in place since 2018, EM issues have also continued related to not following vessel monitoring plans, data loss or lack of hard drives. From OLE's perspective, violations regarding ODDS and EM issues should not be this prevalent, or rising, following numerous years after implementing these programs.

Table 69. IFQ Monitoring Program Violations

Monitoring Program Violations	2016	2017	2018	2019	2020	2021	2022	2023
ODDS issues *(trips not logged, incorrect information submitted, not entering program when required by vessel size, fishing without observer)*	18	9	6	18	12	24	25	16
EM issues *(not following VMP, no hard drive, data loss)*	-	-	-	4	5	11	3	20
Intimidation/ Hostile Work Environment, assault/SASH	1	-	1	1	3	3	2	-
Fail to provide Reasonable Assistance/ impede duties/ inadequate accommodations	1	2	1	2	1	1	1	2
Observer safety *(no wheel watch, watertight hatches, etc.)*	-	1	3	1	-	1	3	2
Fail to notify observer of gear retrieval	-	4	4	1	-	-	1	2

Source: NOAA OLE Electronic Case Management System

Deliberate and inadvertent false reporting in the sablefish and halibut fisheries are a significant concern and focus for NOAA's Office of Law Enforcement to promote an equal playing field for all participants, as both have the potential to impact fisheries management. Area fished violations have the potential to significantly impact the IFQ fisheries because the IPHC and NMFS establish catch limits by regulatory area and NMFS tracks IFQ catch by area to ensure these catch limits are not exceeded (NPFMC and NMFS 2016). As demonstrated in Table 68, detections of recordkeeping and reporting violations, both by vessels and shoreside processors, are quite high and are trending upwards. Although false reporting continues to be a problem, Daily Fishing Logbooks (DFLs), the increasing use of EM in the IFQ Program and Vessel Monitoring System (VMS) data are critical resources aiding OLE investigations to ensure IFQ is being fished and reported in the correct areas. EM can further aid enforcement efforts by allowing the reviewer to check that discards are accounted for.

VMS requirements within the IFQ Program include:

- Vessels fishing for sablefish in the Bering Sea or Aleutian Islands (50 CFR 679.42(k)(2)),
- Vessels fishing for IFQ sablefish in the Gulf of Alaska using longline pot gear (§ 679.42(l))
- Vessels fishing for IFQ/CDQ halibut or IFQ/CDQ sablefish in the Bering Sea or Aleutian Islands using pots (§ 679.42(m))

Note that other FFP endorsements and open seasons may carry overlapping or additional positive VMS requirements.

VMS is a verified method for detecting area violations within closed statistical areas or even distinguishing effort and catch between state and federal waters. While VMS is required for many vessels directed fishing for sablefish, a large portion of the IFQ Program fleet are not required to use VMS. This limits OLE's ability to track at-sea fishing activity and areas fished, potentially leading to higher enforcement costs due to the necessity for at-sea patrols to monitor compliance. Requiring

the use of VMS in all IFQ fisheries would greatly improve OLE's ability to prosecute false reporting violations.

As noted previously, when the Observer Program restructured in 2013, much of the IFQ fleet that were not previously observed (under 60' LOA but over 40' LOA) were included in the partial coverage observer selection pool. Increased coverage on these vessels added much visibility to the fleet, improving OLE's ability to detect potential violations. Further, in 2018 the Fixed Gear EM program was implemented, allowing EM data reviewers to report potential violations they may detect in the course of reviewing footage for selected trips. However, vessels under 40' LOA remain in the zero coverage category, and OLE has limited resources for at-sea patrols and enforcement within this category of vessels. If EM requirements were expanded to this group of vessels, OLE's capabilities to detect violations would be improved, while the need for at-sea patrols would decrease. EM reviewers would further be able to ensure that discards are accounted for. OLE is largely limited to conducting underway boardings when working with USCG or AWT enforcement partners with large-class patrol vessels.

2.12.4 Cost Recovery

Section 304(d)(2)(A) of the Magnuson–Stevens Fishery Conservation and Management Act (MSA), enacted in late 1996, obligates the National Marine Fisheries Service (NMFS) to recover the actual costs of management, data collection, and enforcement of the Individual Fisheries Quota (IFQ) Program for the fixed-gear commercial fisheries for Pacific halibut and sablefish in waters in and off Alaska. The law provides that the fee be paid by IFQ fishermen and that the fee shall be based on the ex-vessel value of fish landed under the IFQ Program. The MSA limits the cost recovery fee liability for IFQ fishermen to 3.0% of the annual ex-vessel value in dollars, goods, and services.

Numerous steps in the annual process must be completed at the end of each IFQ Program fishing season to determine cost recovery fees and before the issuance of IFQ for the upcoming season. These include:

- compiling a list of all IFQ Program landings by species, month, and port or port group;
- using shoreside IFQ Registered Buyer data to calculate a set of standard ex-vessel prices for IFQ fish landed;
- applying the appropriate standard ex-vessel price to each landing, creating a standard ex-vessel value for the landing;
- summing the total standard ex-vessel values of all landings to derive the total ex-vessel value (total fishery value) of the year's IFQ fisheries;
- compiling all direct management, data collection, and enforcement costs (direct program costs) attributable to the IFQ Program;

- using direct program costs and total fishery value to calculate the annual fee percentage; applying the fee percentage to the standard ex-vessel value of a landing on an IFQ Program permit to determine the fee owed for each landing;
- summing the fees owed for all landings on all IFQ Program permits held by each permit holder.
- mailing IFQ permit holders a summary that itemizes their landings and shows their calculated fee.

These administrative tasks must all be completed after the season ending in December and before January 1 due to regulatory stipulations requiring IFQ standard prices to be published in the Federal Register during the last quarter of the calendar year (§ 679.45(b)(3)(iii)). All ex-vessel volume and value reports (IFQ buyer reports) must be submitted by IFQ registered buyers that receive and purchase IFQ landings for accurate cost recovery calculations. After the agency ensures that all ex-vessel volume and value reports have been submitted, the reports are reviewed for accuracy and completion before IFQ fee percentages can be calculated. Once the IFQ fee percentages are finalized, fee notices and standard prices are published in the Federal Register. Individual IFQ cost recovery fee invoices must also be accurately calculated and mailed to individual QS holders.

IFQ permit holders or a Recreational Quota Entry (RQE) must then submit their IFQ fee liability payments to NMFS no later than January 31 of the year following the calendar year in which landings were made or RFQ was issued to the RQE (§ 679.45). If an IFQ permit holder or RQE does not submit payment by the due date, the Regional Administrator can send an initial administrative decision (IAD) to the IFQ permit holder or RQE is due. The IFQ permit holder or RQE can file a petition within 45 days after the date the IAD is issued unless a different timeframe is explicitly specified in regulations governing that IAD (15 CFR 906.3(e)). All fee invoices must be paid in full before any IFQ can be issued for the upcoming season opening in March.

Annual fee percentages are calculated based on the direct program cost divided by the total fishery value and multiplied by 100 to reach a percentage. These are derived from several factors including IFQ, RFQ, and GAF landings to which the IFQ fee will apply, the ex-vessel value of associated landed IFQ, RFQ and GAF, and costs directly related to the management and enforcement of the IFQ Program (§ 679.45(d)(2)(i)). Direct programs costs, IFQ fisheries value and cost recovery fee percentage by year are reported in Table 70. More detailed information related to cost components for all NMFS operating units and external partners can be found in the annual IFQ cost recovery reports (NMFS, 2024c).

Table 70. IFQ Program Costs, Value, and Cost Recovery Fee Percentage

Year	Direct Program Costs	Combined IFQ Fisheries Value	Fee Percentage
2016	$5,902,497	$189,455,394	3.12%*
2017	$4,659,869	$208,013,345	2.20%
2018	$4,573,407	$161,400,657	2.80%
2019	$4,573,407	$150,034,178	3.00%
2020	$4,414,604	$103,127,774	4.28%*
2021	$3,978,894	$171,017,323	2.30%
2022	$4,223,487	$216,771,279	1.90%
2023	$4,856,041	$144,038,414	3.40%*

*Note: *Actual fee liability percentage before the mandatory adjustment to the 3.0% maximum*

Unlike other LAPPs in federally managed fishing in Alaska, QS holders and by extension fee payers in the IFQ Program are largely made up of individuals holding QS and IFQ and not business entities or co-ops. This translates to a large volume of payers and associated administrative work compounding any issues caused by constrained timelines due to season extensions. Considering the sheer volume of payers and administrative processes that must be carried out prior to IFQ issuance, NMFS' ability to address any and all fee appeals before the season begins in March is also constrained by the extended season ending in December.

2.12.5 Administration of QS and IFQ Transfers

Halibut and sablefish QS and its associated IFQ are assigned to QS holders based on vessel categories. These include category A for catcher processors on vessels of any length, category B for catcher vessels of any length, category C for catcher vessels less than or equal to 60' length overall (LOA), and category D for catcher vessels less than or equal to 35' LOA. All catcher vessel QS (category B, C and D) includes owner on board requirements for IFQ holders, but category A QS holders have no owner on board requirements and can transfer associated IFQ. Certain exceptions do exist for catcher vessels, however, and IFQ can be transferred through survivorship or beneficiary IFQ leases, medical leases, military leases, IFQ leases from CQEs to residents and annual transfer of commercial halibut IFQ as GAF to charter halibut holders. More detailed information regarding the transfer of quota shares and IFQ Program provisions are found in § 679.41. Reasons for disapproval may include fewer than 150 days of experience working as an IFQ crewmember,(i.e., certification as a "Bonafide IFQ Crewmember) lack of compliance with citizenship or corporate ownership requirements, an incomplete application of eligibility, and any payments due and owing resulting from federal fishery violations (50 CFR 679.41(d)(6)).

2.12.5.1 Transfer Eligibility Certificates (TEC)

IFQ and QS transfer eligibility requirements are detailed in Federal regulation at 50 CFR 679.41(d). Eligibility to receive catcher vessel QS by transfer is restricted to individuals who received QS by

initial issuance and those individuals demonstrating at least 150 days of commercial fish harvesting experience in a U.S. commercial fishery, with few exceptions. One exception to these eligibility criteria is for eligible nonprofits representing Gulf of Alaska (GOA) communities (Community Quota Entities or CQEs) approved under community protection measures in the IFQ Program. Non-initial recipients that meet the 150 days of commercial fish harvesting experience requirement are designated as "IFQ crewmembers" who, upon approval by NMFS/RAM, are issued a TEC. A TEC establishes a person's eligibility to receive quota share by transfer in the IFQ Program.

2.12.5.2 TEC Minimum Age Policy

On October 3, 2022, the NMFS Alaska Region established an interim policy that set the minimum age for the issuance of an IFQ TEC at 18 years old. The NMFS RAM Division has historically received applications from very young applicants, raising questions and concerns leading to discussion and development of an interim policy. NMFS developed the interim policy to provide the agency with a consistent approach for addressing TEC applications until it is superseded by a change in federal regulation. Harvest crew experience, minimum age requirements under contractual law, and other legal and enforcement considerations were taken into account for the decision.

Applicants must use experience working as an IFQ crewmember (unless they are a community resident of Adak, AK) to qualify for IFQ or QS transfer (50 CFR 679.41(d)(6)). IFQ crewmember is defined at 50 CFR 679.2 and means any individual who has at least 150 days experience working as part of the harvesting crew in any U.S. commercial fishery, or any individual who receives an initial allocation of QS. For purposes of this definition, "harvesting" means work that is directly related to the catching and retaining of fish. Work in support of harvesting, but not directly involved with harvesting, is not considered harvesting crew work. For example, searching for fish, work on a fishing vessel only as an engineer or cook, or work preparing a vessel for a fishing trip would not be considered work of a harvesting crew. To serve as a crewmember in the state of Alaska, individuals are required to have an Alaska Commercial Crewmember's license or hold a Commercial Fishery Entry Commission (CFEC) fishing permit. Minors 11 years of age or older can obtain an annual crewmember license (AS 16.05.480). Individuals holding a crewmember's license are not required to hold a state or federal ID bearing a photograph until they are over 16 years of age (5 AAC 39.110). CFEC permits are generally only allowed to be transferred to those who demonstrate the present ability to engage in the fishery, translating to a minimum age of 10 for setnet permits and 16 years old for all other permits (20 AAC 05.1707).

Federal and state labor laws also vary when it comes to a minimum age for employment in commercial fishing. Federal and state minimum age requirements for employment prohibit and protect minors under the age of 18 from operating specific machinery (such as hydraulic pot and line haulers, as well as winches) often necessary for commercial fishing. Generally, there is a 16 year minimum age for employment set by Federal law (29 CFR 570.2(a)(1)). However, the employment of minors between 14 and 16 is allowed by Federal regulation as long as it meets specific conditions

specified elsewhere in regulation and does not interfere with their schooling, health, well-being and is not deemed to be oppressive child labor (29 CFR 570.31). Federal parental exemptions allow minors under 16 years of age to be employed by their parents in occupations other than manufacturing, mining, or occupations declared hazardous by the Secretary of Labor (29 CFR 570.2(a)(2)). In Alaska state regulations, minors under the age of 18 are allowed to work in commercial fishing, and individuals under the age of 18 may work under the direct supervision of a parent in a business owned and operated by a parent or on a boat owned and operated by their parent (AS 23.10.350(e)).

Federal and state labor laws further detail how many hours minors can work each week. Minors 14 and 15 years old may only work outside of school hours, no more than 18 hours in any week when school is in session and no more than 40 hours in any one week when school is not in session according to Federal regulation (29 CFR 570.35). Alaska state law permits minors under the age of 16 to work between the hours of 5am and 9pm, for a total of 9 hours of school and work combined in one day, no more than 23 hours per week outside of school hours and no more than 6 days per week (AS 23.10.340).

Although age requirements vary between State and Federal labor laws, NMFS must consider requirements governed by contractual law. Contractual law regulates the creation and enforcement of legally binding agreements between parties such as the underlying sales agreement required for QS/IFQ transfer. Under Alaska law, a person is not considered to have arrived at majority until the age of 18, after which the person has control over his or her own actions and business, and is subject to all liabilities of citizens of full age (AS 25.20.010). A contract with individuals under the age of 18 generally cannot be enforced as such contracts are voidable by the minor (RLR v. State, 487 P.2d 27, 34 (Alaska 1971)). Since sales agreements are part of the QS transfer process, these legal considerations should be taken into account.

There is also the issue of a minor's capacity to fully comprehend and competently carry out his or her duties as a QS and IFQ permit holder. The IFQ Program contains a permit holder-aboard requirement (50 CFR 679.42(c)) and fishing can be inherently dangerous. A QS and IFQ permit holder's responsibilities are complex and include, but are not limited to:

- Carrying on board the vessel a legible copy of any IFQ permit used by the permitted person to harvest IFQ halibut or IFQ sablefish at all times that such fish are retained on board. §679.4(d)(1)(ii).
- Complying with the Recordkeeping & Reporting requirements provided at paragraphs (e), (g), (k) and (l) of Section 679.5. Id. § 679.5(a)(2)(iii).
- Not violating the prohibitions applicable to IFQ fisheries. Id. § 679.7(f).
- Conducting a properly debited landing. Id. § 679.40(h).

- Understanding and complying with the limitations on QS and IFQ use, including area and vessel category restrictions. Id. § 679.42(a), (h).
- Being potentially jointly and severally liable with vessel owners and operators for exceeding vessel limitations. Id. § 679.42(h).
- Being aboard the vessel at all times during the fishing trip and being present during the landing. Id. § 679.42(c).
- Being responsible for cost recovery fees for landings of his or her IFQ halibut and sablefish, including any halibut landed as guided angler fish (GAF). Id. § 679.45(a)(1).
- Being responsible for collecting his or her own fee during the calendar year in which the IFQ fish and/or GAF are landed. Id. § 679.45(a)(3)(i).

Related to the aforementioned duties is the issue of whether minors would fully understand that, in the event of a violation, they would be exposed to potential liability for civil penalties and permit sanctions.

NOAA Office of Law Enforcement (OLE) prefers consistency in regulations to promote compliance and ease of understanding, and to improve enforceability. Enforcement officers and special agents could pursue enforcement action against minors for noncompliance with Federal regulations, although consideration should be given to exposing minors to potential liability for civil penalties and citations.

Absent clear direction in the regulations governing the IFQ Program, all relevant labor and contractual laws, as well as compliance and enforcement considerations, must be weighed when determining a minimum age for IFQ eligibility. NMFS recommends initiating a regulatory change to establish a minimum age to be eligible to receive IFQ or QS by transfer based on all applicable laws. This would allow the Council and NMFS to consider a range of options for what the minimum age should be for an individual to receive IFQ or QS by transfer under the IFQ Program.

2.12.5.3 RAM Process for Vetting TEC Applications

RAM currently uses internal eLandings data and publicly available data to research commercial fishing experience claimed in applications for eligibility to receive QS or IFQ by transfer. New administrative processes and collaboration with the State of Alaska would be required to allow for access to and verification of CFEC permits for TEC applications. Currently, the NMFS RAM Division does not have internal access to the State of Alaska Commercial Fishing Entry Commission (CFEC) commercial crewmember license database and CFEC information is not currently required for applications. Additional CFEC data could prove useful in proving and verifying commercial fishing participation for TEC applicants alongside eLandings data, and further enable the NMFS RAM Division to create a new process to verify CFEC crewmember licenses.

2.12.5.4 IFQ Medical Transfer Provision

In the event of a medical condition affecting a QS holder or immediate family member of the QS holder that prevents the individual from participating in the halibut or sablefish fisheries, a medical transfer may be approved for the IFQ derived from the QS held by the person affected by the medical condition (§ 679.42(d)(2)). Emergency medical transfers were first included in federal regulation in 2007 (72 FR 44795, 8/09/2007; § 679.42(d)). At that time, as long as a QS holder could demonstrate a medical condition affecting them or their immediate family member prevented them from fishing owned QS, their QS IFQ could be leased to another party. During this time period, in support of an application for medical transfer, the QS holder was required to submit a written declaration from a "certified medical professional". Since medical transfers were not intended to be a mechanism for QS holders unwilling to participate in the fishery to receive economic benefits without being onboard a fishing vessel, the rule further stated that medical transfers would not be granted to IFQ permit holders fishing leased QS or to an applicant who received a medical transfer in any 2 of the previous 5 years for *the same medical condition*.

Two challenges with this provision were identified in the 2016 IFQ Program Review. Challenges with administering the medical transfer provision included the current definition of a "certified medical professional" does not include commonly used medical care providers such as chiropractors or providers located outside of the United States. The 2007 emergency medical transfer rule inadvertently increased administrative burdens and costs for NMFS, as the agency had to review claims and evaluate the credentials of medical professional qualifications. Enforcement challenges were identified related to the limitation on the use of the medical transfer provisions to 2-years of the previous 5-years for the same medical condition. The medical transfer limitation provision also required NMFS staff to verify the nature of a specific medical condition and whether it was different from other medical claims.

An analysis for a proposed regulatory amendment on the medical transfer provision further indicated that some QS holders have used the medical transfer provision for the majority or all of the years during which medical leasing has been allowed (NPFMC and NMFS, 2019). The repetitive use of the provision may indicate that a select group of shareholders used it as a means of bypassing the owner-on-board provision altogether. Furthermore, some QS holders may have used the medical lease provision for chronic conditions from which recovery is unlikely, although the provision was intended to provide relief for IFQ participants in emergency hardship situations that would eventually return to the fishery.

In 2019, the Council passed a motion modifying the medical (and beneficiary) transfer provision for the IFQ Program to clarify administration of these provisions. The final rule was issued in March 2020, removing definitions of specific types of medical professionals and adding a broader definition and written declaration requirement of a healthcare provider (85 FR 8477, February 14, 2020). This change was meant to increase flexibility for a QS holder when selecting a health care provider for treatment and condition verification for the medical transfer application while reducing application

rejections based solely on the specialty of the healthcare provider. The rule also amended the medical transfer limit (§ 679.42(d)(2)(iv)(C)) by stating that an applicant who received a medical transfer in any 3 of the 7 most recent years for any medical reason would not qualify for medical transfer, superseding the 2 out of 5 most recent years provision. Combined, these changes removed an administrative step for NMFS staff to differentiate medical conditions and reduced information required to be submitted to process a medical transfer application. Soon after implementation of this final rule, the COVID-19 pandemic further prompted changes for IFQ medical transfer administration.

In response to the COVID-19 pandemic, the Council recommended and the Secretary [of Commerce] enacted emergency regulations to allow temporary transfer of halibut and sablefish IFQ for the 2020 (85 FR 38100, June 25, 2020) and 2021 (86 FR 16542, March 30, 2021) fishing seasons. These regulations provided IFQ Program participants flexibility to harvest their IFQ in times of restrictive health and travel mandates, and were enacted under the authority of Section 305(c) of the Magnuson-Stevens Act.

On February 10, 2022, the Council recommended the Secretary enact emergency regulations to allow the same temporary transfer of IFQ for the 2022 fishing season. In response, NMFS denied this request on the basis that continued impacts of the COVID-19 pandemic no longer met the criteria for emergency action and that existing medical transfer and hired master provisions provided enough flexibility for participants. In April 2022, NMFS prepared an analysis to consider the impacts of not counting medical transfers approved between 2020 and 2021 towards the approved limit (NMFS, 2022).

In June 2022, NMFS staff presented a draft regulatory impact review before the Council on an amendment to revise the medical transfer limitation of the IFQ Program. Numerous QS holders have used the medical transfer provision to transfer QS due to health concerns associated with the COVID-19 pandemic. To address health concerns related to the pandemic, a rule was proposed alongside Amendment 124 to the BSAI FMP and Amendment 112 to the GOA FMP. The final rule was published in February 2023 and revised regulations at § 679.42 to exclude medical transfers approved in 2020, 2021 or 2022 from counting toward the 3 of the 7-year medical transfer limitation rule (88 FR 12259, February 27, 2023). These exceptions only apply to those three years and will provide additional flexibility for fishery participants to use medical transfers in future years. This rule will become constraining for individuals who have transferred IFQ through the medical provision as early as 2026.

2.12.5.5 IFQ Transfer Beneficiary Provision

In 1996, NMFS amended IFQ Program regulations to allow for a temporary transfer of QS to surviving spouses of deceased QS holders (61 FR 41523, August 9, 1996). In 2000, a final rule (65 FR 78126, December 14, 2000) expanded the existing survivorship transfer provisions in 50 CFR 679.41(k) to include an immediate family member designated as a beneficiary to whom the survivorship transfer privileges would extend in the absence of a surviving spouse. This transfer was intended to benefit

the surviving spouse, or an immediate family member designated by the QS holder, for a limited period of time.

In 2001, the Council extended the survivorship QS transfer provision to allow the temporary transfer of a deceased QS holder's QS and IFQ to a surviving spouse or designated beneficiary who is an immediate family member of the deceased (66 FR 27908, May 21, 2001). In 2020, a final rule made two changes to the beneficiary transfer provision, defining "immediate family member" at § 679.2 and modifying § 679.41 to add estate representative to the list of people who can receive IFQ held by the decedent for up to three years (85 FR 8477, February 14, 2020). These changes improve and simplify the process of approving beneficiary transfers without causing undue negative impacts on a QS holder's estate planning.

Following a QS holder's passing, the NMFS Regional Administrator will approve an application for transfer of IFQ for a period of 3 calendar years following the date of death of an individual to a designated beneficiary (§ 679.41(k)(3)). The intent of this provision is to provide continued income and allow time for the beneficiary to fish the associated IFQ, lease the IFQ to other qualified fishery participants, and/or become qualified to obtain a TEC and retain the QS at the end of the 3 year beneficiary period. In preparation for IFQ permit issuance for the 2024 IFQ fishing year, NMFS identified an increase in the amount of QS held by beneficiaries beyond the 3 year beneficiary window[17]. In past years, the amount of QS held by beneficiaries beyond the 3-year window that do not hold a TEC has been relatively small.

QS held by beneficiaries is difficult to track in the existing legacy computer system, known as ALDERS. NMFS is working to improve the systems used to administer the IFQ Program through the development of an Integrated Fisheries Application (IFA) software program. The IFQ Program will be implemented in the IFA program in a future fishing year. Until then, NMFS continues to evaluate the current program and improve tracking mechanisms for existing IFQ Program provisions. Under the current system, the beneficiary provision is monitored through manual checks and data reporting to verify how many years the QS has been held by the beneficiary.

In the past, when the QS has been held by a person beyond the 3-year beneficiary window, NMFS has still issued the resulting IFQ permit with poundage to the beneficiary. Beginning with the 2025 IFQ fishing season, NMFS will no longer issue IFQ to beneficiaries that have exceeded the 3-year beneficiary window unless they hold a valid TEC. All beneficiaries that are out of compliance with the 3-year window will be notified and NMFS will phase out the past practice of issuing IFQ to beneficiaries outside the 3-year window to better align NMFS practices with the intended use of the beneficiary provision. As a result of not issuing IFQ to beneficiaries that have held QS for more than

[17] Halibut and sablefish IFQ beneficiary issues were included in the April 2024 B2 report to the Council: https://meetings.npfmc.org/CommentReview/DownloadFile?p=57e10dcd-6900-4626-a00f-e35386615c7f.pdf&fileName=B2%20NMFS%20Management%20Report.pdf

3 years, those QS units will not be included in the QS pool for issuance of IFQ in 2025 and beyond, allowing the resulting IFQ pounds to be distributed among other QS holders in the issuance pool.

The regulations governing the beneficiary provision of the IFQ Program do not provide guidance to NMFS about what should happen to QS held by a beneficiary after the 3-year window following the date of death. If the beneficiary does not acquire a TEC, then they are no longer eligible to receive annual IFQ. Because of the increasing use of the beneficiary provision, it is possible that an ever increasing amount of QS could continue to be held by beneficiaries after the 3-year window. If those beneficiaries hold onto the QS beyond 3-years and do not become active participants in the fishery, then there is the possibility that the annual QS pool would continue to shrink due to QS being removed from the annual pool for which annual IFQ is issued. NMFS recommends that the Council consider if changes to the survivorship transfer privilege regulations at 50 CFR 679.41(k) are necessary to govern what happens to QS held by a beneficiary beyond 3-years.

2.12.5.6 IFQ Return Requests

Occasionally, NMFS receives return requests for transferred IFQ to be returned to the QS holder. In the past, NMFS has received requests for the return of IFQ transferred under the medical transfer provision, and has evaluated these on a case-by-case basis, taking into account the specific technical characteristics of the transfer and the degree of hardship. Harvest of IFQ by the recipient of the IFQ by transfer under the medical transfer provision is considered valid from the time of transfer until the end of the IFQ fishing season. Regulations implementing the IFQ Program at § 679.41 and § 679.42 does not specify a process or criteria for the return of IFQ to a QS holder after an authorized transfer. The IFQ permit system is not designed to accommodate these types of transactions and there are technical limitations impacting the returns of any type.

On June 25, 2020, NMFS published an emergency rule to modify the temporary transfer provision of the IFQ Program for the fixed-gear commercial Pacific halibut and sablefish fisheries for the 2020 IFQ fishing year. Due to the increase in halibut and sablefish IFQ temporary transfers processed under this emergency rule as well as an increase in medical transfers in 2020, the NMFS RAM Division identified unanticipated challenges and heavy workload demands with implementing this emergency rule and limitations of the current IFQ permitting system. Because of this, NMFS was greatly limited when considering requests for the return of IFQ transferred under the 2020 temporary transfer emergency rule (85 FR 38100, June 25, 2020).

To address requests for the return of IFQ transferred under the medical transfer provision, NMFS developed specific policy and technical considerations. NMFS considers the potential hardship that may be caused if the IFQ is not returned, as well as if the origin of the IFQ pounds can clearly be traced. Policy considerations include:

- Did the transferee receive any other IFQ transfers from the same area this year?

- Were there any IFQ landings made with the permit # in question this year?
- Does the transferee hold any of his/her own QS in the same area you are transferring pounds to?
- Is there disagreement between the two parties about the return of transferred IFQ pounds?

If the answer to any of the above considerations is 'Yes', NMFS is unable to return the transferred IFQ pounds to the QS holder. These considerations are necessary because the IFQ system was not designed to track or process transactions for the purpose of returning IFQ to the QS holder after temporary transfer.

2.12.5.7 Requests for Transfer of IFQ Received by Transfer (Sublease)

Requests for subsequent transfer of IFQ currently under a transfer, also known as a sublease of IFQ, are not allowed by regulation. In certain situations IFQ can be returned to the original QS holder. If an individual was leasing IFQ from several different individuals, there are challenges for NMFS to determine whose quota was landed on any given fishing trip. Situations become complicated fairly quickly in determining the origin of unfished IFQ remaining in an IFQ account that has received IFQ from multiple transfers. Furthermore, the system used to administer the IFQ Program (ALDERS) is not able to transfer quota that has already been transferred, regardless of the reason. If a situation arose and met criteria specified in the preceding subsection, IFQ could be returned to the original owner.

2.12.6 Administrative Challenges

2.12.6.1 Transfer Provisions

There are various types of transfer requests the IFQ Program sees over the years with no real regulatory guidance. Decisions made pertaining to each unique case has implications for future decisions on similar transfer requests. For example, provisions do exist for emergency transfers of IFQ related to medical emergencies and active military service, but not for first responders. Occasionally, conflicts have arisen where QS holders that are also first responders have been called to the line of duty and are unable to meet owner-on-board requirements for their associated QS for that season. Currently, they would not qualify for an exemption to transfer their IFQ for the season. There is also concern where an individual has created a living trust in several names, raising questions as to whether it is still held by an individual or all persons names on the trust at that point. Various other transfer-related situations have occurred over the years that are not specified within regulations with each ultimate decision having downstream policy implications for similar requests.

2.12.6.2 Quota Share Lien Registry

A lien is an encumbrance or security against property, held by a creditor, which secures payment of a debt or liability. It is fairly common practice for a QS holder to allow a creditor to place a lien on QS as QS often requires substantial investments to acquire. Anyone including institutions, agencies or individuals can hold a lien on QS. The Alaska Region QS lien registry was created ad hoc for the IFQ Program. It benefits private party lenders, commercial banking institutions, state agencies, as well as the NMFS loan program. The lien registry is administered by NOAA Restricted Access Management Division (RAM). Improvements to the current lien registry are being considered for future system implementation in order to make the process more efficient.

Although liens are placed on QS, NOAA Fisheries does not conduct Uniform Commercial Code (UCC) filings to make halibut and sablefish QS liens legally binding, nor can NOAA enforce this requirement on QS holders. There might be an assumption that QS liens are legally binding, but lenders would need to conduct a UCC filing to make it so. The IFQ Program lien registry is also administratively challenging to maintain, as NMFS is in many cases not informed of when liens are no longer applicable or have been paid off by debtors. While the lending institution could be paid off in full, the applicable QS would still be listed as having an interested lienholder. The NMFS RAM Division is frequently asked to run asset reports for individuals when a lending institution is reviewing an applicant's credit history for a potential lending transaction to determine whether or not they have outstanding liens, which could be inaccurate due to inaccurate information on resolved payments to lien holders. If there is a default on loan payment, the Division requires legal agreements or court documents from the lien holder to transfer the QS to their name. There are then technical questions on whether or not a lien holder can hold QS, the transfer activity that can or cannot be conducted by the repossessor, and for how long the lien holder is able to hold the QS.

2.12.6.3 Overage and Underage Calculations

Overage and underage provisions allow QS holders to have a margin of error in harvesting annual QS allocations and have been in regulation since the implementation of the IFQ Program. A rule finalized in December 2013 clarified regulations at § 679.40, stating that commercial halibut and sablefish fishery overage adjustments from the previous year will be subtracted from a person's IFQ for the next season (78 FR 75844, December 12, 2013). Commercial halibut and sablefish fishery underage adjustments from the previous year are added to a person's IFQ issuance for the next fishing season.

If an individual owning QS or someone they lease or hire to fish their annual IFQ harvests over their allocated IFQ amount, the originating QS holder's IFQ account will be adjusted the following year after the determination has been made as long as the amount does not exceed 10% of the amount available in the person's annual IFQ account at the time of landing. This adjustment is called an "overage", and is a deduction of the amount of IFQ species harvested or landed that exceeded the individual's allocated IFQ amount and applies to any person to whom the affected IFQ is allocated in the year following the determination. NOAA's Office of Law Enforcement (OLE) administers all

overage violations above the 10% allowable adjustment threshold. If an individual owning QS harvests under their annually allocated IFQ amount, up to 10% of their total initial IFQ amount for that season will be added to that individual's annual IFQ account for the year following determination of the "underage". The adjustment is specific for IFQ species, IFQ regulatory area, and vessel category (§ 679.40(e)). This is true even if the individual has leased IFQ from others. The QS harvester gets preference for underages for up to what they are entitled to for their owned IFQ, then the underage is reapportioned to the QS owner that leased IFQ beyond that amount.

Overages and underage adjustments require complicated programming by NMFS to calculate next season's annual IFQ allocations for each QS holder. This process is time consuming for administration, and can delay issuance of IFQ for the following year. Further complicating matters is a legacy computer system that requires backtracking and manual tracking of these adjustments, particularly when multiple IFQ transfers are involved. Increasingly, more lease recipients and hired masters are fishing for multiple QS holders. If there are two or three parties involved in the transfer chain (i.e. a vessel operator has fished IFQ transferred from several different individuals in one season) the computer program may assign the overage or underage to the wrong IFQ account. The NMFS RAM Division must then manually track, code and troubleshoot each problem individually to correctly apply the calculations to the correct individual. This process can be fairly complex and takes valuable time and resources away from other administrative processes. There is a lag period at the end of the IFQ fishing season when QS holders cannot make transfers due to these ongoing account adjustments. This can be problematic for QS holders who want to transfer QS during the off-season. A new system, the Integrated Fisheries Application (IFA) is under development and is intended to resolve many of these issues, although the system is several years from implementation within the IFQ Program.

2.12.6.4 Extended Season

The short derby style fishery for halibut and sablefish in Alaska was eliminated through IFQ Program implementation, subsequently transitioning the fishery to longer seasons. Since then, fishing season dates have generally opened in mid-March, with the exception of February openings during 2004 and 2005, and closed in early to mid-November[18]. The season has continued to open in early to mid-March in recent years, but beginning in 2021 the seasons have been extended through December 7. Although the season has been extended, the timing for administrative procedures for reconciling IFQ account balances, calculating overage and underages and issuing annual cost recovery invoices have not. IFQ standard prices (used to determine IFQ fee liabilities under the cost recovery program) are required by regulation to be published in the Federal Register during the last quarter of the calendar year (October 1–December 31) for halibut and sablefish landings made during the calendar year (50

[18] Season dates for fishing under the Pacific halibut and sablefish IFQ Program and the community development Quota (CDQ) Program: https://www.fisheries.noaa.gov/s3/2024-03/ifq-cdq-seasons-0.pdf

CFR 679.45(b)(3)(iii)). These standard prices are used, along with estimates of halibut and sablefish IFQ landings, to calculate standard ex-vessel value for landings made during the fishing season.

Since 2020, lengthier seasons have constrained administrative procedures that were originally developed to occur during the historically longer off-season. Due to the decreased time between the closure of the fishing season and the deadline for publishing the notice announcing the IFQ Program cost recovery fee percentage and standard prices, IFQ Program administrative tasks have become extremely challenging to complete. Reporting deadlines, timing of overage and underage calculations, cost recovery and IFQ issuance are all impacted. For instance, landings reconciliation is a necessary component of cost recovery calculations. With the season ending December 7 and standard prices needing to be published by December 31, the cost recovery calculation reconciliation process has a very short window to be completed. In order for NMFS to calculate the fee percentage, all landings of IFQ have to be properly debited from IFQ accounts to be able to accurately calculate the total fishery value. Processes that must be completed prior to correct cost recovery include gathering reporting data, calculating the fee percentage, working through the Federal Register system to notify the public and mailing bills to QS holders; all of this has to happen in about three weeks according to regulation. NMFS uses standard prices and averages from previously in the season (September, October, and November) to stay on target. Quality checks have become difficult to include with such a heavy workload in a short amount of time.

The NMFS RAM Division is responsible for vetting report data and ensuring that registered buyers for halibut and sablefish are submitting their ex-vessel volume and value reports in hard or electronic copies. Currently, there is no enforcement mechanism to ensure that all reports are turned in on time or at all, causing the Division to reallocate resources away from other crucial tasks to obtain IFQ buyers reports. Fee notices must be reviewed extensively before being published in the Federal Register by December 31. Considering the season closure of December 7 and the holidays, there is not enough time to thoroughly review inputted data from the large volume of individual landings for fee calculations with implications for accuracy of accounting.

Regulations stipulating the timing of IFQ standard price reporting were written at a time when the fishery was closing earlier than the three most recent seasons. NMFS recommends initiating a regulatory change to adjust the timing of the annual cost recovery process to address the current time limitation for this annual process. An analysis would need to evaluate adjustments to the various due dates and provide recommendations for any downstream impacts on other processes. The IFQ fee liability payment(s) due date would then need to be extended later than January 31 of the year following the calendar year in which the IFQ or GAF landings were made, closer to the IFQ issuance and season start date, which could have tax implications for QS holders and may lead to less time for appeals.

2.12.6.5 Halibut Retention in State Groundfish Pot Fisheries

The Alaska Board of Fisheries (BOF) received a proposal in the 2024/25 cycle to modify Prince William Sound (PWS) groundfish pot specifications by allowing retention of halibut caught in non-IFQ sablefish and groundfish pot fisheries in PWS (Proposal 3, 5 AAC 28.230).

The Northern Pacific Halibut Act of 1982 is the implementing legislation for the Convention between the United States and Canada for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and Bering Sea (Convention). All waters, including State waters, off the west coast of Canada and the United States are included in Convention waters and all fishing for Pacific halibut within these waters must comply with the Convention and regulations of the International Pacific Halibut Commission (IPHC).

IPHC regulations allow the retention of halibut taken with longline or single pot gear if such retention is authorized by NOAA Fisheries regulations published at 50 CFR 679. NOAA Fisheries regulations state that vessels fishing for IFQ sablefish using longline pot gear must retain halibut if the halibut is caught in any Federal GOA reporting area including the Southeast Outside District, West Yakutat District, as well as Central and Western GOA Regulatory Areas, as long as an IFQ permit holder onboard the vessel has unused halibut IFQ for the IFQ regulatory area fished and IFQ vessel category (§ 679.42(l)(6)).

Federal regulations governing halibut IFQ retention in pots in the GOA are specific to the federally managed IFQ sablefish fisheries and do not currently authorize vessels fishing for sablefish in the GOA State managed sablefish fisheries occurring with pot gear to retain halibut even if unused halibut IFQ is held by a person onboard the vessel.

The Northern Pacific Halibut Act of 1982 does not provide the BOF with authority to allow halibut retention in State waters sablefish or other groundfish pot fisheries. Such authorization would need to occur either in IPHC regulations or in Federal regulations governing the halibut and sablefish IFQ Program similar to previous Council recommendations authorizing use of pot gear in the IFQ fisheries and implemented by NOAA Fisheries in 2016 and 2020.

3 Conclusions and Findings

This section provides a summary of how well the IFQ Program is meeting its goals and objectives based on the analysis in Section 2. With respect to other program performance key areas set forth in the *Guidance for Conducting Review of Catch Share Programs* (NMFS 2017), most of the key areas are addressed in the analysis of the program's goals and objectives. To avoid duplication, the findings for those key areas are not presented separately here. For those key areas not covered in other summaries of findings—namely, allocation review, duration, and auctions and royalties—separate subsections detailing conclusions are provided below. Also included in this section are 1) an assessment of the program's effects on net benefits to the Nation; 2) a summary of unexpected effects (positive or negative) which do not fall under the program's goals and objectives; and 3) a listing of issues associated with the program's structure or function and the potential need for additional data collection and/or research.

3.1 Findings with Respect to Program Goals and Objectives

Table 71 summarizes findings with respect to the achievement of program goals and objectives. The focus is on changes in program performance since the 2016 IFQ Program Review. As noted in the previous review, it would be unreasonable to expect a review to make causal claims regarding the impact of the IFQ Program for many (if not all) the program goals and objectives because the goals and objectives are broad and do not include specific, measurable targets. In addition, many of the goals and objectives overlap, while others are inherently conflicting. As a result, a review of the IFQ Program is limited to making general statements about how trends in the IFQ fisheries relate to the program goals and objectives.

Table 71. Summary of Changes in Program Performance Since the 2016 IFQ Program Review

Program Goals and Objectives	Changes in Program Performance Since 2016 IFQ Program Review
Address the problems that occurred with the open-access management regime—	
Allocation conflicts (Section 2.4.3.2)	No additional allocation conflicts within the IFQ Program were identified. However, allocation conflicts did occur between the target and non-target fisheries, prompting the Council to set abundance-based PSC limits for the Amendment 80 fleet in 2022.
Gear conflicts (Section 2.4.3.1)	Limited data are available to analyze gear conflicts, most recent evidence comes from an early study of the program where program participants reported "uncrowded fishing grounds" as an outcome.
Dead loss from lost gear (Section 2.11.1.1 and Section 2.11.2.1)	As stated in the previous review, the IFQ Program has decreased fishing pressure and reduced deadloss from lost gear, primarily in the halibut fishery. For halibut, mortality estimates from lost gear have continued to decline 2015-2022 to an average of 0.06 Mlb per year. For sablefish, no estimates are available to estimate losses or changes.

Program Goals and Objectives	Changes in Program Performance Since 2016 IFQ Program Review
Bycatch loss (Section 2.11.1.1 and Section 2.11.2.1)	Estimated discards and discard rates of FMP groundfish in the halibut IFQ fleet have increased since the previous review, 2023 reported the highest discard rate of FMP groundfish (55%) since observer data began to be used to estimate discard rates in 2013. Average annual discards of FMP groundfish by the sablefish IFQ fleet have declined since the previous review.
Discard mortality (Section 2.11.1.1 and Section 2.11.2.1)	Both legal-sized and sublegal-sized discards of halibut by the halibut IFQ fleet have generally decreased since the previous review. Between 2016 and 2023 the discard rate of sablefish remains consistent with the historical average, at around 5%.
Excess harvesting capacity (Section 2.4.2)	Since the previous review, the number of active vessels in both the halibut and sablefish IFQ fisheries have continued to decline overall, consistent with the long term-trend. As of 2023, the halibut fishery had 669 vessels making active landings, down an additional 27% from 2014 and down 68% compared to 1995 levels. In the sablefish fishery as of 2023 the fleet has decreased by 11% since 2014 and 55% since 1995.
Product wholesomeness (Section 2.4.4)	Since the previous review, the proportion of halibut deliveries that were headed and gutted-only has increased, from less than 50% between 2009-2015 to 100% since 2019. Sablefish delivery conditions have also changed, with larger percentages of bled-only fish since 2015, increasing to 45% of deliveries in 2021.
Safety (Section 2.10)	Four fishing fatalities have occurred since 2016, which is consistent with the long-term trend of fewer fatalities than in the pre-IFQ period.
Economic stability in the fisheries and communities (Section 2.9)	Some larger, regional port communities with a long history of engagement in the halibut and sablefish fisheries continue to benefit from the program by retaining security of access to the IFQ fisheries. Since the previous review, additional CEQs have acquired halibut and sablefish QS, but many small, rural communities continue to have limited access to the IFQ fisheries due to lack of QS by residents.
Rural coastal community development of a small boat fleet	The previous review noted that this objective largely relates to the allocations of halibut and sablefish to the CDQ Program at the time of IFQ Program implementation, and because the CDQ Program is a separate management program, it is not examined as part of the IFQ Program. However, the current review examined changes in the vessel size composition of the fleets in the IFQ fisheries (Section 2.4.5) and changes in IFQ landings and QS holdings in small, rural Alaska communities (Section 2.9). The findings of those sections are summarized elsewhere in this table.
Link the initial quota share allocations to recent dependence on the halibut and sablefish fixed gear fisheries (Section 2.3)	Because this objective concerns the initial allocation, no changes were identified from the previous review.
Broadly distribute QS to prevent excessively large QS holdings (Section 2.3 and Section 2.4.6)	Since the previous review, holdings of QS have become less concentrated in the sablefish fishery, but more concentrated in the halibut fishery. For the halibut fishery, overall QS holdings are less concentrated than they were in 2002.
Maintain the diversity in the fleet with respect to vessel categories (Section 2.4.5).	As discussed in the previous review, the prohibition of QS trading between vessel classes functionally fixed the distribution of QS between vessel classes at initial allocation. That distribution of QS across vessels has not changed in either IFQ fleet since the last review (Sec 2.4.5.3).The vessel size composition of the IFQ fleets has also remained relatively stable since the previous review (Sec 2.4.5.2). However, with the continued consolidation of both IFQ fleets, there have been shifts in revenue (Sec 2.4.5.3) and landings (Sec 2.4.5.5) across vessel sizes. In the halibut IFQ fleet, the proportion of landings and revenue earned by vessels between 35 and 60 ft LOA has increased by 4%, and the proportion of revenue by earned by vessels 60 ft LOA or under in the sablefish IFQ fleet has also increased by 4%. However, the largest change in the sablefish IFQ fleet since 2016 is the increasing predominance of pot gear usage, which was used by 82% of vessels prosecuting IFQ sablefish in 2023 (Sec 2.4.5.6).

Program Goals and Objectives	Changes in Program Performance Since 2016 IFQ Program Review
Maintain the existing business relationships among vessel owners, crews, and processors (Section 2.5 and Section 2.6.1)	The number of crew days and crew trips in both fisheries has declined over time, but not as much as the decline in the number of active vessels, supporting conclusions from the previous review that the IFQ program has increased stability and wages for crew that remain in the fishery. Due to the requirement that bona fide crewmembers can only purchase QS and enter the fishery, the number of IFQ crewmembers and proportion of QS held by these individuals has continued to increase over time. While the number on onshore buyers/processors have declined by 53% between 1971–2022, much of this is accounted by major shift between 2007–2009, which appears to be widespread throughout Alaska fisheries and is not believed to be caused by anything directly related to the sablefish and halibut fisheries of the IFQ Program.
Assure that those directly involved in the fishery benefit from the IFQ Program by assuring that these two fisheries are dominated by owner/operator operations (Section 2.7).	Since the previous review, both IFQ fisheries decreased their hired master use overall. Hired master use in the halibut catcher vessel fishery decreased from 32.6% in 2014 to 24.7% in 2023. Hired master use in the sablefish catcher vessel fleet decreased by 44.7% to 31% in the same period.
Limit the concentration of QS ownership and IFQ usage that will occur over time (Section 2.4.6 and Section 2.6.2)	Since the previous review, holdings of QS have become less concentrated in the sablefish fishery, but more concentrated in the halibut fishery. For the halibut fishery, overall QS holdings are less concentrated than they were in 2002. Additionally, the proportion of QS held by new entrants has continued to increase.
Limit the adjustment cost to current participants including Alaska coastal communities (Section 2.9)	Since the previous review, the percentage of the total QS held by Alaska residents has increased in both IFQ fisheries. Among Alaska communities, some have increased their engagement in the processing and harvesting of IFQ fish since the previous review. However, other communities have seen a decrease in engagement, which suggests that they are incurring ongoing adjustment costs to IFQ Program implementation.
Increase the ability of rural coastal communities adjacent to the BSAI to share in the wealth generated by the IFQ Program	The previous review noted that this objective relates to the implementation of the CDQ Program, and because the CDQ Program is a separate management program, it is not examined as part of the IFQ Program.
Achieve previously stated Council goals and objectives and meet MSA requirements	Although not expressly addressed in the analysis and key findings, this is evaluated throughout Section 2.

3.2 Findings with Respect to Selected Key Areas

The following sections highlight findings with respect to key areas that must be included in catch share reviews per guidance from NOAA Fisheries (NMFS 2017).

3.2.1 Allocation Review

In 2016, NMFS published Policy Directive 01-119, *Fisheries Allocation Review Policy*, which provides a mechanism to ensure fisheries allocations are periodically evaluated to remain relevant to current conditions. It requires the Councils to identify a trigger for all fisheries that contain an allocation. The trigger could be based on time, public input, or an indicator. When a specified trigger is met, Councils must assess if a revision to the allocation is needed. However, the policy does not require Councils to implement any changes to the allocation (NMFS 2023c).

At its June 2017 meeting, the Council reviewed a discussion paper describing the new requirements for triggering an allocation review. In April 2023, staff prepared a workplan for program and allocation reviews to facilitate a more efficient process while still meeting review requirements.

According to the workplan, for those allocations that are within the scope of a program review, the program review will be considered sufficient to satisfy the allocation review requirement.

3.2.2 Duration

The final EIS for the IFQ Program states that harvesting privileges under the IFQ Program would be good for an indefinite period of time but would be subject to periodic change, including revocation, in accordance with appropriate management procedures as defined in the MSA (NPFMC and NMFS 1992). Those who control QSs or IFQs need not be compensated for any such change. Regulations would have to be changed to alter or eliminate the program. As stated in the 2016 IFQ Program Review, in 2012, in response to a recommendation from the Council, NMFS issued a final rule, sending notices to QS holders who had been inactive since IFQ Program implementation that their QS would be revoked. The Council defined inactive as a QS holder who had not fished their IFQ or engaged in transfers. In addition, QS distributions by vessel class can change from initial issuance in an area due to appeal adjudications. In several cases QS was revoked to correct erroneous issuance (if still held by initial recipient) or for failure to pay fines resulting from violations.

3.2.3 Auctions and Royalties

At the time the IFQ Program was developed the MSA did not allow IFQs to be auctioned by the government, and fees to cover the cost of implementing, administering, and enforcing the program could not be collected from those who own QS (NPFMC and NMFS 1992). As stated in the 2016 IFQ Program Review, while it is still possible to consider the use of auctions or other means to collect royalties for the subsequent distribution of privileges, this may present equity considerations among program participants because many of the initial recipients who received QS allocations at no cost have sold their QS since program implementation. Additionally, while royalties and cost recovery fees are not synonymous, NMFS has implemented a cost recovery program to recover the incremental costs of management, data collection, and enforcement of the IFQ Program.

3.3 Net Benefits to the Nation

A key question of a LAPP review is to assess whether, on the whole, society is better off under the program than it would have been without the program. Ideally, this change would be measured by comparing changes in consumer and producer surplus against a counterfactual scenario of the fishery without the program. While data limitations prevented the current review of the IFQ Program from constructing such a scenario or provide a quantitative estimate of changes in net benefits to the Nation, it is able to discuss major drivers of changes in benefits and costs as a result of the IFQ Program and the likelihood that net benefits have increased by comparing trends before and after program implementation. In addition, this discussion draws on the body of academic literature evaluating outcomes under the fishery.

There is evidence that overall, the program has affected several key economic indicators which may have positively affected net benefits over the long run. Principally, the end of derby conditions, extending season lengths (Section 2.4.1, have allowed harvesters to more effectively plan their operations around market conditions for the IFQ fisheries and other fisheries they participate in. Average revenue per vessel has generally increased since the program was implemented (Section 2.4.6.2), in part due to ex-vessel price increases (Warpinski et al 2016). However, the design of the IFQ Program attempted to balance economic efficiency with social objectives of the program, and several elements of the program directly constrain economic efficiency. Kroetz, Sanchirico, and Lew (2015) found that resource rent (a measure of added value to society) in the fisheries was reduced by 25% in the halibut fishery and 9% in the sablefish fishery as a result of the vessel class and blocking restrictions on QS transfers.[19] As noted in the previous review, at the time that the program was implemented, it was expected that economic efficiency would be negatively impacted by QS trading restrictions, among other aspects of the program, such as requirements for hired-master use, however, these efficiency costs were weighed against expected benefits to providing more widespread fishing opportunities and employment in the IFQ fisheries. In addition, the Council took into account the role of small vessel fleets to coastal communities, and measures were implemented to provide community protections. However, the net benefits to specific communities and individuals within those communities may or may not be positive under the IFQ Program. Several larger, regional port communities with a long history of engagement in the halibut and sablefish fisheries benefited from the program by securing continuing access to the fisheries. However, some small, rural communities saw their access to the IFQ fisheries limited due to the loss of QS by residents.

3.4 Unexpected Effects

This review did not identify any unexpected effects (positive or negative) which do not fall under the program's goals and objectives.

3.5 Identified Issues and Areas for Future Research

This section to be completed following Council review

[19] It should be noted that the dataset used for this study was for 1995-2011 and as a result may not fully capture impacts of later regulation changes which may have impacted flexibility, such as the fish-up provision.

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