Agenda Item G.1
Attachment 3
November 2020

Preliminary Analysis of Gear-Switching Alternatives

October 2020

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1.0 Introduction

1.1 Purpose and Organization of Document

Summary: This document is intended to help the Council determine whether the current range of alternatives is adequate and whether the elements and options within the alternatives are specified as desired by the Council.

At the September 2020 Council meeting, the Council adopted a purpose and need (see Section 1.3) and voted to "move forward with considering potential modification of regulations regarding the use of fixed gear to catch sablefish in the trawl IFQ fishery north of 36° N. lat." During this agenda item, the Council is considering adopting a range of alternatives. This document provides a preliminary analysis of the alternatives forwarded by the Sablefish Area Management and Trawl Allocation Attainment Committee (SaMTAAC) for Council consideration (Agenda Item G.1.a, SaMTAAC Report, September 2020). It includes analysis of specific provisions of the alternatives, including qualifying requirements. The qualifying requirement analysis was previously provided in Agenda Item D.1., Attachment 1, September 2020. Analyses of other provisions are derived from information previously provided to the SaMTAAC. In addition to the analyses, Section 3.0 intended to provides preliminary thoughts on approaches for developing projections of the expected amount of gear switching for each action alternative.

1.2 Background

Background information including history of limited access programs and the Council's original decisions on gear switching, a summary of the trawl allocation under attainment issue, overview of trawl sector participants, and future sablefish constraints and potential gear switching can be found in the analytical document provided for the September 2020 Council meeting (Agenda Item D.1, Attachment 1).

1.3 Purpose and Need

At its September 2020 meeting, the Council adopted the following purpose and need statement for this action.

> This action is needed because the Shorebased Individual Fishing Quota (IFQ) Program has under attained most of its allocations since the inception of the program in 2011. The under attainment for some northern stocks may be due to the allowance to use fixed gear to harvest shorebased IFQ, declining trawl vessel participation, and the lack of market and infrastructure. Specifically, participants engaging in gear switching are using northern sablefish quota that may otherwise be used by trawl gears; this may lead to uncertainty in trawl access to sablefish, thereby affecting the development of markets and infrastructure. Working within the guidance and authority provided by the MSA (§303A(c))[1] and the

[1] Section 303(A)(c) of the MSA sets forth elements defining the creation of limited access privilege programs, including the promotion of fishing safety; fishery conservation and management; and social and economic benefits.

Pacific Coast Groundfish Fishery Management Plan (FMP) goals and objectives, the purpose of this action would be to keep northern sablefish gear switching from impeding the attainment of northern IFQ allocations with trawl gear, while considering impacts on current operations and investments.

Under attainment results in the Shoreside IFQ Program being unable to meet Management Goals 2 and 3 of the FMP which respectively seek to maximize the value of the groundfish resource as a whole and to achieve the maximum biological yield of the overall groundfish fishery. Additionally, this action would seek to improve the program towards the goal of Amendment 20 to the FMP, which created the Shorebased IFQ Program, of providing for full utilization of the trawl sector allocation.

1.4 SaMTAAC Principles

In developing the alternatives that are the focus of this analysis, the SaMTAAC was partially guided by the following principles which it developed[2] (but have not been formally adopted by the Council).

A. We want to ensure there is affordable trawl access to sablefish.
B. We believe that unlimited catch of sablefish through gear switching is not desirable.
C. We want to consider impacts on existing operations/investments.
D. We want to maintain the gear-switching option for trawl operations.
E. We will consider industry and community impacts and ensure long-term stability.
F. We will consider the effect on the value of trawl permits.
G. We want to increase the net economic value of the trawl individual fishing quota fishery.

Principle C, it should be noted, references consideration of impacts to investments related to trawl, fixed gear, and buyer/processor operations.

2.0 Design and Preliminary Analysis of Alternatives

2.1 No Action

Under No Action, in order to gear switch in the IFQ fishery, a vessel needs to acquire a trawl permit and quota pounds (QP) to cover harvest (as well as comply with observer coverage requirements and pay cost recovery and vessel buyback fees). Each year, entities with quota share (QS) accounts are issued QP for the QS held in those accounts. QS accounts may be opened by anyone eligible to own a US documented fishing vessel. Thus, to acquire QP, a vessel can either lease QP from a QS account owner or acquire its own QS.

[2] At its October 2018 meeting, and in consideration of the working principles that were originally developed by the Community Advisory Board (CAB), the SaMTAAC developed and adopted principles that the alternatives would be designed to support.

Vessels can gear switch up to the annual vessel limit of 4.5 percent of the shorebased IFQ allocation. In 2020, the annual vessel limit is 261,591 pounds. Gear switching levels will continue to fluctuate with the amounts and participation influenced by the groundfish markets and opportunities for other fisheries as described above in Section 2.0 and 6.0 of Agenda Item D.1., Attachment 1, September 2020. For reference, the utilization by gear type and participation in gear switched harvesting of sablefish north of 36° N. lat. from 2011-2019 is provided in Table 1 below.

Table 1. Sablefish north of 36° N. lat. total catch by year and gear type (millions of lbs.) compared to the allocation and total available pounds (allocation plus surplus carryover) and number of gear switching vessels and permits, 2011-2019. Source: catch from 2011-2018 GEMM, 2019 Pacific Coast Groundfish IFQ Database Viewer; participants from PacFIN.

Landing Year		**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2011-2019 Avg**
Total Catch		5.29	4.92	4.07	4.13	4.82	5.02	5.56	5.08	5.64	4.95
Catch by Gear	**Trawl**	3.75	3.26	3.09	2.86	3.24	3.22	3.69	3.27	3.62	3.33
	Fixed Gear	1.54	1.66	0.98	1.27	1.58	1.80	1.87	1.81	2.02	1.61
Allocation Lbs		5.61	5.44	4.03	4.38	4.85	5.32	5.33	5.56	5.69	5.13
Percentage by Utilization	**Trawl**	66.8%	59.9%	76.7%	65.3%	66.8%	60.5%	69.2%	58.8%	63.6%	65.3%
	FG	27.4%	30.5%	24.3%	28.9%	32.6%	33.9%	35.1%	32.5%	35.5%	31.2%[a/]
	Unharvested	5.8%	9.6%	-1.1%	5.7%	0.6%	5.6%	-4.4%	8.7%	0.9%	3.5%
Available Lbs		5.61	5.44	4.29	4.52	5.05	5.46	5.64	5.67	5.94	5.29
Percentage by Utilization	**Trawl**	66.8%	59.9%	72.1%	63.3%	64.2%	58.9%	65.4%	57.7%	60.9%	63.2%
	FG	27.4%	30.5%	22.9%	28.0%	31.3%	33.0%	33.2%	31.9%	34.0%	30.2%[b/]
	Unharvested	5.8%	9.6%	5.0%	8.7%	4.5%	8.1%	2.4%	10.4%	5.1%	6.6%
Gear Switching Participants	**Vessels**	17	20	11	15	14	16	16	15	15	15
	Permits	17	21	11	14	14	16	16	15	15	15

a/2016-2019 average is 34.2%
b/2016-2019 average is 33.0%

2.2 General Considerations for Action Alternative Qualification Provisions

Council History on Allocation of Limited Entry Privileges (Vessel Owner or Permit)

One of the central decisions for any allocation based on historic participation is determination of the entity for which the history will be evaluated in making the allocation. Alternatives 1 and 2 would allocate gear-switching privileges based on gear-switching history of the permit, while Alternative 3 would allocate based on the vessel. Where the permit and vessel remain continuously together under common ownership (including being transferred together to new owners), there would not be an effective difference between the two with respect to which received the allocation. Where a permit is leased or where the permit and vessel are transferred separately from each other, different individuals will benefit from the initial allocations depending on whether the allocation is given to the permit owner or vessel owner. This section provides information related to these issues.

The history of the Council's deliberations on the basis for allocations in other groundfish limited entry programs is summarized in the final SaMTAAC Report and excerpted here (Agenda Item D.1.a., SaMTAAC Report, September 2020, Section B.2.1).

> Under its license limitation program, the Council chose to allocate based on vessel history rather than the history of individual fishermen. This helped both to limit the number of permits initially issued and provided a means for entry and exit while the program was under development (allowing the Council to argue in court that by allocating to the current owner of a vessel with historic participation, rather than someone who owned a vessel in the past, it had taken into account current participation). For its fixed gear sablefish endorsement (Amendment 9), the fixed gear tier system (Amendment 14), and the IFQ program (Amendment 20), the Council allocated based on permit history. It was argued that, as with the vessel, the permit allowed entry and exit during development of the program (taking into account current participation) and that the permit had become the primary asset associated with the fishing privilege (and had no value except to the extent that it conveys such a privilege). Therefore, allocating to the permits also recognized investment in the permit and dependence on the fishery for recover of that investment. At the same time, with implementation of the catch share program, much of the value of the trawl limited entry permits was likely split off into the QS and the QS accounts, which often carries the more valuable element of the fishing privileges (as compared to limited entry permits). Permit values may have declined somewhat since the IFQ program and may be driven more by their value in the trawl fishery than their use for gear switching. To the degree that this is the case, as compared to before the IFQ program, there may be less concern about the effect that constraining a permit related fishing privilege has on permit value.

Shorebased IFQ Vessel and Permit Interactions

Gear-switching vessels tend to rely more heavily on leasing permits than vessels using trawl gear. Between 2011 and 2019, roughly half of gear-switching vessels (including those that both gear switched and trawled in the same year) leased their trawl permits (Table 2). Comparatively, trawl vessels that landed sablefish north had an average lease rate of 6.4 percent. For trawlers, the last four years had the highest proportion of leased permits at an average of 10.6 percent, ranging from 7 percent in 2016 to 13 percent in 2017 and 2019.

Table 2. Percentage[a/] of gear-switched[b/] and trawl vessels by year that used leased permits versus those that owned permits.

Gear	Permit Used	2011	2012	2013	2014	2015	2016	2017	2018	2019
Gear Switched	Leased	53%	55%	36%	53%	43%	38%	38%	47%	67%
	Owned	47%	50%	64%	47%	57%	63%	63%	53%	40%
Trawl	Leased	4%	1%	3%	3%	5%	7%	13%	9%	13%
	Owned	98%	99%	98%	97%	97%	97%	91%	91%	87%

a/ Values can add up to greater than 100% based on vessels using more than one permit type in a year and rounding.
b/ Vessels that used both trawl and fixed gear in a single year are in the "gear switched" category.

There have been 40 distinct vessels and permits associated with making landings of gear-switched sablefish north between 2011 and 2019. For most of these vessels, only one LE trawl permit was used to gear switch during this nine-year period (Table 3). Eight of the 40 vessels used more than one permit to harvest sablefish north with fixed gear. In fewer than three instances, vessels used multiple LE trawl permits within a single year.

Table 3. Number of vessels by number of LE trawl permits they have been registered to while using fixed gear in the IFQ fishery, 2011-2019

Number of Vessels Using Only 1 Permit	32
Number of Vessels Using 2 Permits	5
Number of Vessels Using 3 Permits	3

While the table above shows that 32 vessels used only one permit, in a few cases, a single permit was used by more than one vessel. Of the trawl endorsed permits used for gear switching since 2011, 30 have been used on only one vessel while ten have been used on more than one (Table 4). This implies that two of the 32 vessels that used only one permit shared those permits with at least one other vessel.

Table 4. Number of LE Permits by number of vessels they have been used with to land fixed gear sablefish north in the IFQ fishery, 2011-2019

Number of Permits Registered to only 1 Vessel	30
Number of Permits Registered to 2-3 Vessels	10

Overall, there have been 51 distinct combinations of vessels and permits landing sablefish north with fixed gear from 2011-2019. While there have been four vessels that have landed sablefish north with fixed gear in all nine years, no permits were used for gear switching in all nine years. Thus, none of the four vessels maintained the same permit for the entire period (2011-2019; Table 5). There are six vessel/permit combinations that were used for seven or eight years from 2011-2019. Of those six vessels and permits making up those combinations, fewer than three vessels have landed sablefish north in all nine years.

Table 5. Number of distinct permit-vessel combinations and duration of use in gear-switched landings, 2011-2019.

	Number of Years								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Permit-Vessel Combination	23	10	5	3		4	6		0

Qualification Options that Include Credit for Harvest After the Control Date

On the issue of adherence to control dates in the qualifying requirement options, the National Marine Fisheries Service (NMFS) provided the following discussion for SaMTAAC consideration at its October 2019 meeting:

> NMFS would also like to address the issue of control dates and provide some guidance for your consideration. While control dates can be helpful in providing notice to participants that may engage in speculative activity, the Council is not under legal obligation to use the control date as a component of eligibility criteria. It is a policy decision whether a control date is used in an alternative and how it is used. As noted in the advanced notice of proposed rulemaking that we published about the control date (83 FR 18259; April 26, 2018):
>
> > *The Council also voted to set a control date of September 15, 2017, to account for participants' financial investment to engage in gear switching in the shorebased IFQ trawl fishery. By establishing this control date, the Council is notifying industry that it may not provide credit for gear switching related activity after this date, in the event that it adopts restrictions on gear switching.*
> >
> > *This announcement does not commit the Council or NMFS to any particular action or outcome. The Council may or may not use the control date as part of any deliberations and decisions on gear switching. The Council may also choose to take no further action.*

2.3 Alternative 1

Section Summary: Alternative 1 would create gear specific QPs, and each QS account would receive a specific portion of trawl-only and unrestricted (i.e. status quo) QPs. Under one option, the Council could choose to allow permit owners with a history of gear-switched

sablefish landings to "opt out" a QS account which would then receive all of its QPs as unrestricted. In summary:

- *Based on the amounts of QS in existing QS accounts, in 2018-2019 vessels with some gear-switched landings averaged more gear switching than could be covered with QP from a single QS account under either gear-specific QP option (10 percent or 30 percent issued as unrestricted QP).*
- *Vessels would be more likely able to cover their average landings with the inclusion of the option for a mid-year conversion of all QP to unrestricted, or the QS account opt-out option.*
- *With a mid-year conversion date, it does not seem likely that gear switching would be constrained to below current levels.*
- *Between 26 and 38 permits would qualify for an opt-out under the current options, with 21 qualifying under all four options.*

Gear Specific QP Options

Alternative 1 would create gear specific QPs. Each QS account would receive a specific percentage of QPs as trawl-only, with the remainder as unrestricted (the proportions determined based on the options selected, as show in Table 6). If the Council chooses, there would be an option for qualified permit holders with a history of gear switching to "opt-out" a QS account which could then receive all of its QPs as unrestricted. Qualified permit owners could select any QS account as an opt-out account, not just accounts they own.

This section focuses on the amounts of unrestricted gear QP that would be issued to QS accounts that are not opted out (either because an opt-out provision was not included, the account did not qualify, or the qualifying entity chose to not opt-out), assuming the amounts of QS currently in accounts as of February 18,2020 and applying the 2020 QP allocations. The SaMTAAC recommendations specify that under Alternative 1, if Gear Specific QP Percentage Option 2 (90 percent trawl/10 any gear) is selected, the opt-out option should also be provided, because 10 percent was not viewed as providing an adequate amount for gear switching (Figure 1). Based on this recommendation, the Council should consider that over the long term, as the opt-out accounts expire (discussed below), that the overall level of gear switching would be restricted to 10 percent. If Option 1 is selected (70 percent trawl/30 percent any gear), then the SaMTAAC recommended alternative specifies a choice on whether or not the opt-out option would be included as part of the alternative.

Table 6. Alternative 1 gear specific percentage options and if an opt-out option is provided.

Gear Specific QP Percentage Options	Percentage of QP Issued	
	Trawl Percentage	**Any Gear**
Option 1	70	30
Option 2 ***(Option 2 is only available if the opt-out provision is selected)***	90	10

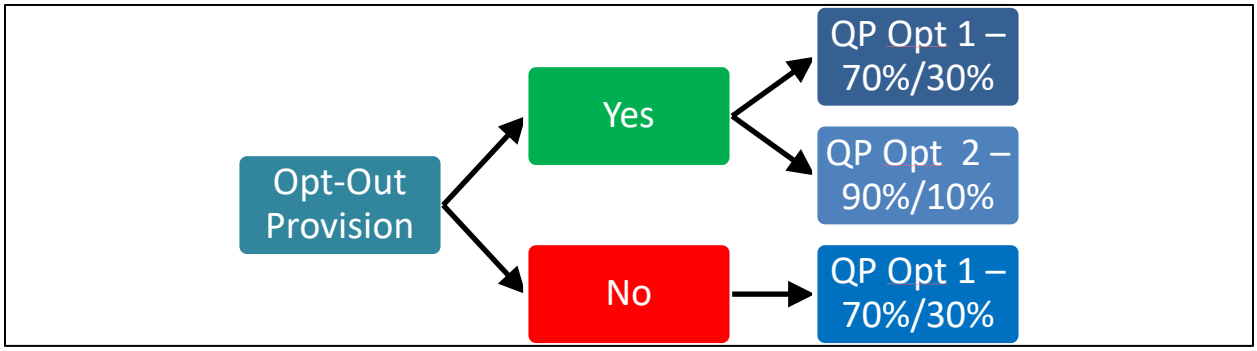


Figure 1. Gear specific QP percentage option contingent on opt-out provision choice.

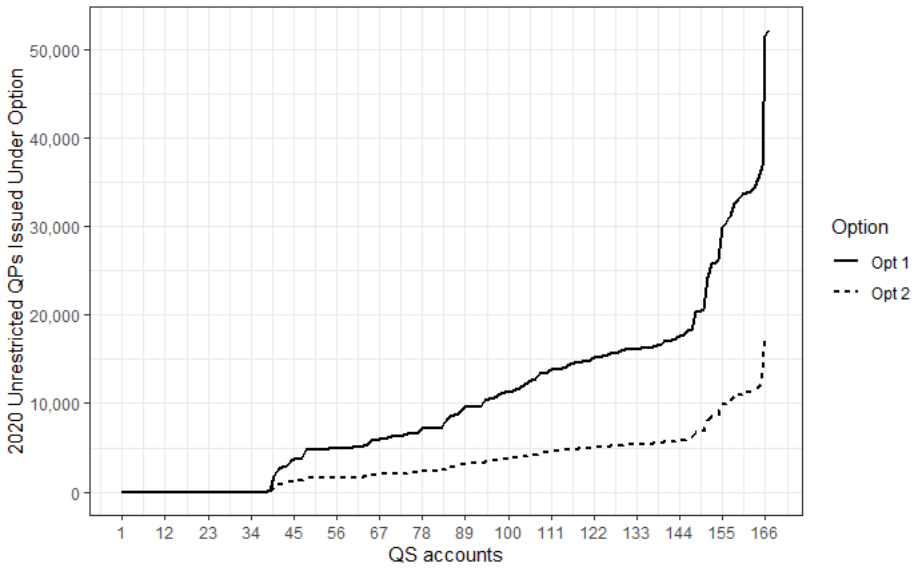
While the amounts of unrestricted QP available would be as indicated by the option, one question to consider is the effort that would be required for vessels engaged in gear switching to gather up the unrestricted QP. Using current 2020 QS ownership information, Figure 2 below shows the distribution of the amount of unrestricted QPs each QS account would receive under each Gear Specific QP Percentage Option, assuming no opt-out (i.e. all QS accounts receive their QPs at the designated proportions). Thirty-eight QS accounts, or approximately 25 percent of QS owners, own no sablefish north of 36° N. lat. QS as of February 18, 2020.

Under Option 1, the most unrestricted QP going to any single account would be just over 52,000 lbs (under Option 2, that account would receive about 17,000 lbs). These maximum values are close to the maximum amounts of northern sablefish QP that could be allocated to an account under the 2020 trawl allocations, given the three percent control limit for QS accounts. For 2018-2019, vessels with some fixed gear IFQ sablefish landings averaged 113,870 lbs. To achieve this average level of gear switching through acquisition of unrestricted QP, in the absence of opt-out accounts or a mid-year conversion provision, a vessel would need to acquire unrestricted QP from multiple QS accounts. Based on the QS ownership in February 2020, it would take unrestricted QP from a minimum of the three QSAs under Option 1 and nine QSAs under Option 2. However, it is likely that vessels interested in gear switching would need more trades than the minimum, as those top three or nine accounts respectively may not be willing to trade and there are multiple gear switching vessels that would likely want at least as much unrestricted QP as the average

annual amount for all gear switchers. Participants would need to consider the costs associated with finding QSAs willing to sell or trade quota.

Under Option 1, approximately two-thirds of the QS accounts (108) would receive more than 5,000 unrestricted QP (more than approximately 0.1 percent of the QP) and 21 would receive smaller amounts. Those 21 accounts would receive unrestricted QP in the amount of 1.4 percent of the total allocation—equivalent to 4.8 percent of the total amount of unrestricted QP issued (Table 7). Under Option 2, only 46 QS accounts (about 25 percent of all accounts) would receive more than 5,000 unrestricted QP, leaving 83 accounts with less than 5,000 pounds. Those 83 accounts would receive unrestricted QP in the amount of 3.9 percent of the total allocation, or 39 percent of the total amount of unrestricted QP issued. Table 8 shows the minimum number of accounts with which the gear switching fleet would have to engage in transactions to accumulate a variety of levels of unrestricted QP. For example, it would take obtaining QPs from a minimum of 18 QS accounts under Option 1 to accumulate 10 percent of the total allocation as unrestricted but all 129 accounts with northern sablefish QS under Option 2. Thus, relative to Option 1, Option 2 would potentially require harvesters interested in gear switching larger amounts to engage in contracts drawing unrestricted QP from a greater number of QS accounts in order to accumulate an adequate amount of unrestricted QP. This is one reason the SaMTAAC recommended that the 90/10 option not be selected unless there is also an opt-out provision. Additionally, given that in recent years gear switchers have taken more than 30 percent of the trawl QP, unless an opt-out or a mid-year conversion of trawl-only QP to unrestricted QP,[3] neither of the Gear Specific QP Percentage Options are likely to allow gear switching to continue at recent levels.

[3] Options are provided that would allow mid-year conversions to occur on August 1 or September 1.



Note: QS accounts are ordered on the x-axis from least (left) to most (right) sablefish north QS owned as of February 18, 2020.

Figure 2. Amount of 2020 QPs that would be issued under the Alternative 1 Gear Specific QP Percentage Options assuming no opt-out is provided.

Table 7. Number of QSAs by the amount of unrestricted QPs that would be allocated under each Gear Specific QP Option based on QS account holdings as of February 18, 2020 and the corresponding percent of the total allocation.

Amount of Unrestricted QPs	**Option 1**		**Option 2**	
	Count of QSAs	**Percentage of Total Allocation**	**Count of QSAs**	**Percentage of Total Allocation**
≤100 lbs	0	-	1	0.001%
≤500 lbs	1	0.004%	1	0.001%
≤1000 lbs	1	0.004%	5	0.058%
≤2000 lbs	2	0.033%	29	0.727%
≤5000 lbs	21	1.433%	83	3.925%

Table 8. Minimum number of QS accounts (as of February 18,2020) to get a specified percentage of unrestricted QPs.

Percentage of Allocation	Minimum number of QS accounts required under	
	Option 1	Option 2
2.5%	4	12
5%	8	35
7.5%	12	65
10%	18	129
20%	54	
30%	129	

Option for Conversion to Unrestricted QP and Conversion Dates

Under Alternative 1, there are three options for conversion dates of trawl only QPs to unrestricted QPs. Two are mid-year conversion dates (August 1 and September 1) and Option 3 would be for post-season and carryover QPs after the end of the fishing year.

The conversion option will impact the degree to which the purpose of the action is achieved (a limitation on gear switching). For example, if the normal distribution of gear switching activity is such that all the activity up through the conversion date can be accommodated by the gear specific QP issued at the start of the year (and gear switching vessels are able to consolidate all of those QP into their accounts), then application of the conversion date might result in little impact with respect to a reduction in gear switching relative to recent patterns. Similarly, past gear switching levels might be maintained simply by redistributing fishing within the year – assuming there is enough time left in the year after the conversion date to accommodate that amount of gear switching.

Another question would be whether an Alternative 1 that includes a conversion date might be restrictive of some higher level of gear switching that might otherwise occur in the future. For that to happen, the higher level of gear switching would have to be dependent on gear switching occurring before the control date that would instead be restricted by the limited amount of QP available up through the conversion date.

In considering a conversion date for sablefish QPs to switch from "trawl only" to "any gear," there have been concerns that if the amount of unrestricted QP issued at the start of the year is too little or too difficult to consolidate into the accounts of fixed gear vessels, the conversion date could be too late to allow gear switching entities to maintain their recent harvest levels, which would also affect those from whom they acquire QP.

Historically, gear switching vessels have utilized on average around 25 percent of their total fixed gear landings before August 1st and just over 35 percent through before September 1st (Table 9). While there has been variation in the amounts taken by month, with over a high of over 44 percent being caught before September 1st in 2018, there is a high likelihood that at least 60 percent of the sablefish utilized by fixed gear would be caught after a September 1 conversion date.

Looking at the utilization by fixed gear compared to the total available QPs for sablefish north, 2018 saw the greatest percentage of use before August 1st with 10.91 percent (Table 10). On average, vessels took 7.75 percent across the nine years before August 1st. Based on this, under Gear Specific QP Option 2 (10 percent unrestricted), to the degree that gear switching vessels are able to consolidate the available unrestricted QP, in most years, inclusion of an August 1 conversion date would result in a minimal likelihood that gear switching would be constrained compared to recent years. Any impact would most likely be in the form of a redistribution of catch within the year rather than a reduction in gear switching. By the end of August, fixed gear utilization of all available QP has ranged from 4.83 percent (in 2011) to 14.1 percent (in 2018 and 2019). With 10 percent of the QP issued as unrestricted, a September 1 conversion date appears more likely to have an impact on gear switching, compared to the August 1 conversion date. Though again, the main impact may be a redistribution of some of the catch within the year rather than a reduction in gear switching from recent levels. With 30 percent of the QP issued as unrestricted, it appears that providing a conversion date would have little impact in limiting gear switching. As discussed above, even though Alternative 1 with the conversion date options might not reduce current levels of gear switching, there is some possibility that it would restrain a major expansion of gear switching (to the degree that the higher levels of gear switching which would otherwise occur could not be attained in the four or five remaining months of the year).

Table 9. Percent of total gear switched catch utilized before the proposed conversion dates (August 1 and September 1) from 2011-2019.

Used Before	2011	2012	2013	2014	2015	2016	2017	2018	2019	Avg.
August 1	9.6	22.62	22.81	25.86	32.45	27.48	25.71	34.09	24.81	25.05
September 1	17.73	29.53	34.59	36.76	42.74	38.36	35.4	44.11	41.52	35.64

Table 10. Percent of total available quota pounds utilized by fixed gear before the proposed conversion dates (August 1 and September 1) from 2011-2019.[a/]

Used Before	2011	2012	2013	2014	2015	2016	2017	2018	2019	Avg.
August 1	2.61	6.94	5.26	7.38	10.4	9.23	8.64	10.91	8.42	7.75
September 1	4.83	9.06	7.97	10.49	13.7	12.88	11.89	14.12	14.1	11.00

a/ Note that these are total QPs, not just landings, and discards are apportioned by gear type through the proportional method described in the October 2019 SaMTAAC Analysis.

In terms of Option 3, which would convert any trawl-only QPs to unrestricted after the end of the fishing year, there are two sub-options currently under consideration: conversion prior to preseason trading and conversion at the time of surplus carryover. Under Amendment 21-4 to the groundfish Fishery Management Plan, QPs from the previous year can be traded until around March 1 to cover a previous year vessel account deficit, as opposed to using QPs from the current year to cover the previous year deficit (50 CFR 660.50). Therefore, under the first sub-option, the conversion would occur prior to the start of post season trading and the unrestricted QP would be available to cover any deficits (deficits incurred with either trawl or fixed gear) from the prior fishing year. Once converted to unrestricted the QP would remain unrestricted for the purpose of administering the QP carryover provision. Table 11 below shows the amount of QP deficits by year from 2011-2019. The level of deficits varies by year, with only one vessel account going into deficit in 2018 compared to eleven vessels in 2017 accounting for 64,227 QPs, one of which contributed over 45,000 lbs to the total deficit. In all years, the number of gear switching associated vessel accounts in deficit was less than or equal to the number of trawl only vessel accounts (the number of such gear switching accounts is too few to reveal additional information, due to confidentiality concerns).

Under the second Option 3 sub-option, the conversion of trawl-only to unrestricted QP would only occur for carryover QP. Thus, converted QP would not be available for post season trading. When the carryover is implemented, any surplus trawl-only carryover pounds would be re-issued as unrestricted rather than trawl only and/or unrestricted. Given the Council's new default harvest control rule in which the sum of the ACLs for sablefish north and south are equal to the coastwide ABC, no carryover will be issued starting in 2021. If at some time the Council chooses to manage sablefish with a harvest control rule where the ACL is less than the ABC or if the legal requirements surrounding the ability to carryover change, then under Option 3, any carryover would be issued as unrestricted in the future. For reference, from 2013-2020, surplus carryover has averaged ~2 million lbs (no carryover was issued in 2011 or 2012).

Table 11. Total Deficit QPs of Sablefish North by Year

Year	Total Deficit QPs
2011	8,940
2012	2,889
2013	2,106
2014	706
2015	4,835
2016	2,416
2017	64,227
2018	6
2019	1,038

One of the potential Alternative 1 impacts that was discussed by the SaMTAAC was on QP prices. If Alternative 1 includes a conversion date, it seems likely that fishermen would anticipate the increased availability of unrestricted QP after the conversion date and make sales agreements, the execution of which would be deferred until the conversion date. Thus, unless Alternative 1 with a conversion date is effective in reducing total gear switching relative to no action, it is not immediately apparent that it would substantially impact QP prices relative to no action. It could however, introduce some flexibility constraints and increase transaction costs (because if a transaction agreement were made early in the year but could not be immediately executed some longer term contract might be needed).

Option for an Opt-out Provision

Under this alternative's opt-out provision, all permit owners that qualify under one of the sub-options described above would select a QS account to be designated as opted out. Section 2.2 provides information on the choice to allocate to permit owners versus vessel owners. Qualifiers could select their own account (either one that already has QS in it or a newly created account) or an account that is not under their ownership. Many gear switchers lease at least a portion of the QP they gear switch and so, even with an opt-out, may not have enough QS in their own account to support their past levels of gear switching. However, once an opt-out account is designated, additional northern sablefish QS can be added to it, up to the three percent control cap, and all the QS added will also have opt-out status. The following sections provide a preliminary assessment of those opt-out provisions' qualification requirements and potential impacts to permit holders.

Opt-out Qualifier Analysis

If the opt-out provision is included under this alternative, qualification for the opt-out would need to be determined. Table 12 shows the four options for permit qualification, the number of permits that would qualify or not qualify under each option and across all options, and the qualifying permits as a percentage of the total with some gear-switching history from 2011-2018 (percentage of 38 permits). As shown, between 26 and 38 permits would qualify under the different options with the same 22 permits qualifying under all four options. Table 12 also provides the percent of the 2020 trawl allocation harvested by qualifying or non-qualifying permits based on the average

poundage of catch for the qualified permits from 2011-2018. Note that this is not a projection, but rather a metric to provide a sense of their historical participation relative to the total amount of gear switching, which has averaged 34.2 percent of the allocation from 2016-2019.

Sub-Option A would qualify all of the 38 permits with some gear-switched landings from 2011-2018, as it would only require a single landing. Two additional permits entered the gear-switching fishery in 2019 and would not qualify under Sub-Option A. Of the 38, there are two permits that would not qualify under any of the other sub options (i.e., under Sub-Options B, C, or D), as they had less than 10,000 pounds of total fixed gear sablefish north landings over the entire 2011-2018 period.

Sub-Option B would eliminate five permits that would qualify under Sub-option A, three because they did not gear switch in amounts above 10,000 pounds until after the control date and two because they did not have 10,000 pounds of landings overall.

Sub-Option C, which focuses solely on the more recent 2014-2018 period in which total participation has stabilized, would qualify the least number of permits and therefore may have the most impact in terms of non-qualifiers (12 total non-qualifying permits). Two of the Sub-Option C non-qualifiers would not qualify under any option except A, while the other ten Sub-Option C non-qualifying permits would qualify under either Sub-Option B or D. With respect to those ten, after the first three years of the program five appear to have exited the IFQ fishery (the permits became latent) while the other five appear to have tested out fixed gear in a single year early in the program and then become trawl-only for some or all of the rest of the time series. Therefore, for permits screened out by Sub-Option C, the actual impacts of not being able to opt-out may be low, since their fishing operations have either changed in that the permit became latent or they switched to fishing only trawl gear.

Sub-Options B and C have the same minimum landings requirement, but the qualification period is different. There are 23 permits that would qualify under Sub-Option B or C with 10,000 lbs landed either between 2011 and the control date or between 2014-2018. There are three permits that would not qualify under Sub-Option B but would qualify under the latter period provided by Sub-Option C. These three permits accumulated their first 10,000 lbs of gear-switching after the control date in 2017 or 2018. While they could be considered active participants, there is consideration of the notice of the control date and understanding that activity after that point might not be used in determining privileges.

Sub-Option D increases the landings levels by 20,000 lbs compared to Sub-Options B and C. Two permits that would qualify under either Sub-Options B or C would not qualify under Sub-Option D as they did not have 30,000 lbs in either of the Sub-Option D qualifying periods.

A comparison of the total permits qualifying or not qualifying under each option, as shown in Table 12, does not fully reveal total number of permits that would become non-qualifiers in moving from one qualifying option to another. Table 13 below provides two-way comparisons of pairs of qualification criteria options, including the difference in total number of permits and the number qualifying under the first option listed and not the second (and vice versa). It also shows total

number of permits that would be affected by this decision, or in other words, how many permits would get the opt-out opportunity under only one of the two options. For example, the last row shows the comparison between Sub-Options C and D. There is an eight-permit difference in the number of qualifiers between these sub-options. Only two permits would qualify under Sub-Option C and not Sub-Option D; however, ten permits would qualify under Sub-Option D and not Sub-Option C. Although the landings requirement is higher under Sub-Option D (30,000 lbs compared to 10,000 lbs under C), the Sub-Option C qualifying period would not include earlier years (2011-2013) and therefore eliminate more qualifiers. Overall, there would be 12 permits potentially affected by the decision (and 24 permits that would be qualified under either option).

Table 12. Number of trawl permits that would qualify or non-qualify under Alternative 1 sub-options, percentage of permits of those with gear switching history (2011-2018), and percent of 2020 allocation caught by permits based on average catch from 2011-2018 (all years).

		Qualifying Permits				Non-Qualifying Permits			
Sub-Option	**Qualification**	**Number of Permits**	**Number Qualifying Under All Options**	**Percentage of Permits with Gear-Switching History**	**% of 2020 Allocation based on Average Catch 2011-2018[b/]**	**Number of Permits**	**Number Not Qualifying Under All Options Except A**	**Percentage of Permits with Gear-Switching History (2011-2018)**	**% of 2020 Allocation based on Average Catch 2011-2018 [b/]**
A	Between 1/1/11 and 12/31/18, one fixed gear sablefish landing	38	22	100%	27.16%	0	2	0%	0%
B	Between 1/1/11-9/15/17, a minimum of 10,000 lbs of fixed gear sablefish landings	33[a/]		86.8%	26.87%	5		13.2%	0.30%
C	Between 1/1/14-12/31/18, a minimum of 10,000 lbs of fixed gear sablefish landings	26 [a/]		68.4%	24.19%	12		31.6%	3.08%
D	Between 1/1/11-9/15/17 or between 1/1/14-12/31/18, a minimum of 30,000 lbs of fixed gear sablefish landings	34 (21 under either period, 10 only under the early Period and 3 only under the later period)		89.5%	27.06%	4		10.5%	0.10%

a/ 23 permits would qualify under both Sub-Option B and C

b/ Note that this is not a projection, but rather a metric to provide a sense of their historical participation relative to the total amount of gear switching, which has averaged 34.2 percent of the allocation from 2016-2019.

Table 13. Comparison of number of permits qualifying between two Sub-Options under Alternative 1.

Comparison of Sub-Options	Number Qualifying Under the More Liberal of the Two Options	Difference in Total Number of Permits Qualifying	Number of Permits That are Affected by the Choice Between the Compared Sub-Options	Number Qualifying under First Option and Not Second Option	Number Qualifying under Second Option Not First Option	Number Qualifying Under both Sub-Options
A vs. B	38	5	5	5	0	33
A vs. C	38	12	12	12	0	26
A vs. D	38	4	4	4	0	34
B vs. C	33	7	13	10	3	23
B vs. D	34	1	3	1	2	32
C vs. D	34	8	12	2	10	24

Opt-out Accounts: Amounts of Unrestricted QPs

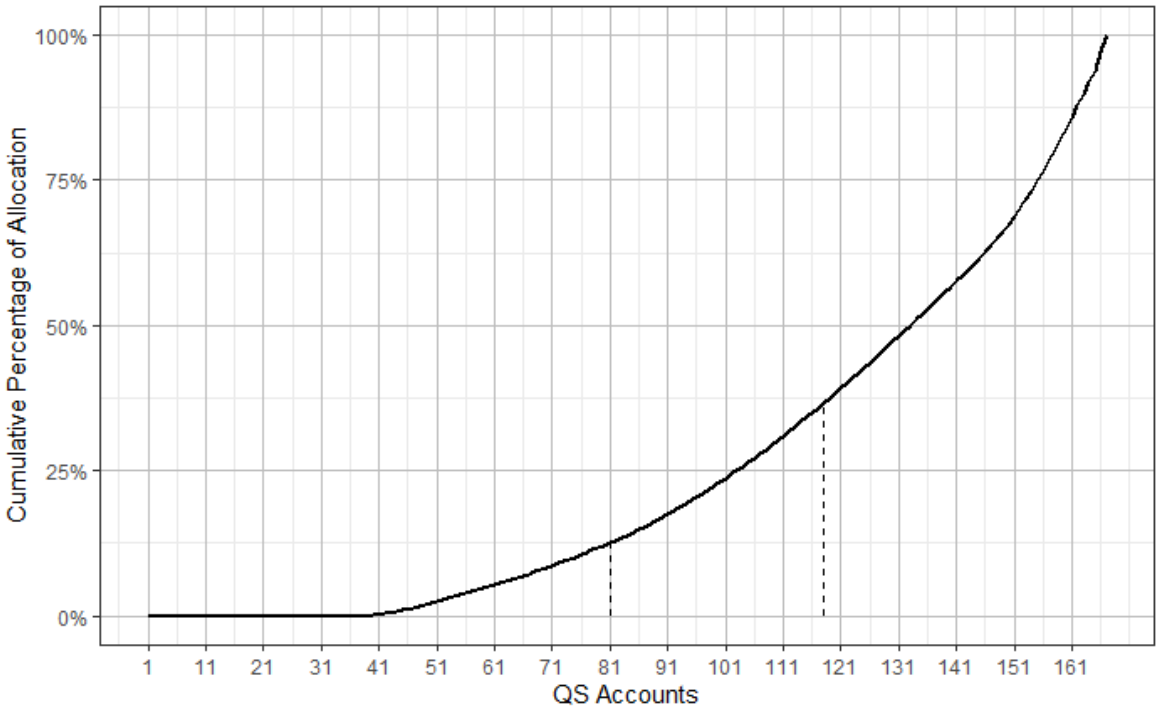
A qualifying permit owner may opt out a QS account that they own (either one they currently own or one that they establish and add QS to later) or any other QS account. If a qualified permit owner does not opt-out their own account, it is likely that they would select a QS account that they have a business relationship with that could provide the necessary QPs for fishing. To maintain past gear-switching levels and fulfill their business strategy (particularly levels that are greater than three percent), permits (and the corresponding vessels) with their own opt-out accounts may also need to find additional QPs from non-opt-out QS accounts that would receive their QPs as unrestricted, 10 or 30 percent depending on the option.

While it is impossible to determine which QS account a permit holder without a QS account may choose (or if they would create a QS account instead), Table 14 shows the number of QS accounts by percentage of northern sablefish QS held in 2020 and Figure 3 shows the distribution of the percentage of allocation that each QS account at the start of 2020 received. As described above, about 25 percent of all QS accounts have no sablefish north quota. Of the remaining QS accounts, the corresponding percentage of allocation they would receive would range from 0.01 to 2.99 percent in terms of QP (i.e., after taking into account the AMP distributions). The top 38 QS accounts own approximately 53.6 percent of the quota. It seems unlikely that all of the top 38 accounts would be designated for opt-out, particularly given the opportunity to add more QS to the account and receive the associated QP as unrestricted. As an example, to give a further feel for possible initial outcomes, one can pick 38 permits from the middle of the range (say QS

accounts 81 to 118 as shown by the dashed lines in the figure below) and see that the permits in that range accounted for around 25 percent of the allocation (based on the difference between the height of the two dashed lines).

Table 14: Number of QS permits that own a specified amount of sablefish north QS as of February 18m 2020.

Percent	0	0.001-0.500	0.501-1.000	1.001-1.500	>1.5
Number of QS Permits	38	55	54	7	13



Note: QS accounts are ordered on the x-axis from least (left) to most (right) sablefish north QS owned as of February 18, 2020.

Figure 3. Cumulative percentage of sablefish north allocation issued across QS accounts.

If a permit was unable to qualify for an opt-out, in order to gear switch, they would be reliant on the QPs issued to their QS account as unrestricted (if they have a QS account), or reliant on other non-opt accounts and opt-out accounts willing to sell QP. Or, if a mid-year conversion date is included, then any sablefish QPs could be used for gear switching later in the year.

Other Aspects of Alternative 1

This section covers some other aspects of the alternative the Council should be aware of but on which specific action is not necessarily needed as part of adoption of the range of alternatives.

Choice of QP to Use: Vessels using trawl gear that have both unrestricted and trawl-only QP will have a choice as to which to use to cover their sablefish catch. Making that choice will create extra steps for the person filling out the fish tickets and potential for errors that will need to be corrected as noted in SaMTAAC Agenda Item E.2, NMFS Report 1, October 2019. Another approach would be default rule that would be implemented through programming. As noted in the NMFS Report, a "standard formulaic approach to gear-specific QP would be the most simple to implement, reduce administrative costs, and reduce potential fish ticket bookkeeping complexity." An example rule would be: all sablefish north landed with trawl gear would automatically be debited as trawl-only QP first, until fully utilized, then any remaining trawl sablefish would be debited against unrestricted QP.

2.4 Alternative 2

Section summary: Alternative 2 would establish a gear-switching endorsement for trawl permits that would have gear switching limits that are higher for endorsed than non-endorsed permits. Overall,

- *between 10 and 15 permits would qualify for an endorsement under the current options, with 10 permits qualifying under all options.*
- *there are two options for the gear switching limits for endorsed permits.*
  - *Under Endorsement Limit Option 1 (each permit receives a limit based on the average catch in active gear-switching years as percentage of the trawl allocation), three of the 10-15 permits would receive a limit of above three percent.*
  - *With respect to Endorsement Limit Option 2 (the limit for every permit is 4.5 percent of the trawl allocation, i.e., the annual vessel limit), a vessel with an endorsed permit would not be constrained to fish below its past gear-switching level, though if the vessel chooses to share its permit with another gear switcher, it would also share the 4.5 percent limit. Only six permits that would qualify under all options have caught more than four percent of the trawl allocation in at least one year between 2011-2018.*
- *For the permits with some gear-switching history that would not qualify for an endorsement under any option, approximately two-thirds of those permits' average active gear-switching catch would exceed 0.5 percent limit proposed for non-endorsed permits.*

Alternative 2 would establish a gear-switching endorsement for qualified limited entry trawl permits. Endorsed permits would provide a sablefish north gear-switching limit for the vessel(s)[4]

[4] More than one vessel might fish the same permit during the year but the permit limit would apply across all vessels, i.e. would have to be shared between the vessels.

attached to the permit that is larger than that for non-endorsed permits. Non-endorsed permits would have a smaller gear-switching limit (0.5 percent).

Permit Endorsement Qualifier Analysis

Between 10 and 15 permits would qualify under the different options with the same 10 permits qualifying under all options (Table 14). For historical reference (but not as a projection), these qualifiers gear-switched amounts that would be equivalent to between 17 to just over 19 percent the 2020 allocation. Of those permits with some history of gear switching, between 25 and 29 would not qualify for an endorsement, depending on the qualifying option. As with Alternative 1, there are two permits that had gear-switching history after 2018 that would not be awarded an endorsement or are included in the population of gear-switching permits in the table.

A comparison of the total permits qualifying under each option, as shown in Table 14, does not fully reveal total number of permits that would become non-qualifiers in moving from one qualifying option to another. Table 15 below provides a comparison of the qualification criteria, including the difference in total number of permits and the number qualifying under the first option listed and not the second (and vice versa). It also shows total number of permits that would be affected by this decision, or in other words, how many permits would receive an endorsement under only one of the two options. For example, the last row shows the comparison between Options 2 and 3. There is a two-permit difference in the number of qualifiers between these sub-options. Only one permit would qualify under Option 2 and not Option 3; however, three permits would qualify under Option 3 and not Option 2. Thus, overall, there would be four permits potentially affected by the decision between these two options (and 10 permits that would be qualified under either option). Note that these comparisons do not include the recent participation sub-option. There is only one permit that would qualify under Option 1 or 2 but not Option 3, but would not meet the Option 1 and 2 recent participation requirement. Thus, if those sub-options were included, it would not meet the criteria for any of the options.

Table 15. Number of limited entry trawl permits that would qualify or not qualify under each qualification option for Alternative 2, the corresponding percentage of permits with gear-switching landing history from 2011-2018, and percent of the 2020 allocation based on average catch (2011-2018; all years).

		Qualifying Permits				Non-Qualifying Permits			
Option	**Qualification Criteria**	**Number of Permits**	**Number Qualifying Under All Options**	**% of Permits with Gear-Switching History**	**% 2020 Allocation based on Average Catch 2011-2018**	**Number of Permits**	**Number Not Qualifying Under All Options**	**% of Permits with Gear-Switching History (2011-2018)**	**% 2020 Allocation based on Average Catch 2011-2018**
1	10,000 lbs per year in at least three years between January 1, 2011 and September 15, 2017	15	10	39%	19.22%	23	22	61%	7.95%
	… and participated in at least one year between 2016 through 2018	14		36%	18.42%	24		63%	8.74%
2	30,000 lbs per year in at least three years between January 1, 2011 and September 15, 2017	11		28%	17.85%	27		71%	9.31%
	… and participated in at least one year between 2016 through 2018	10		26%	17.05%	28		74%	10.11%
3	30,000 lbs per year in at least three years between January 1, 2011 and September 15, 2017 and participated in at least one year between 2016 through 2018 or caught 90,000 lbs of north sablefish cumulatively across three years from 2014 to 2018, with at least one gear-switched landing in each of those three years.	13		33%	18.78%	25		66%	8.38%

Table 16. Comparison of the number of permits qualifying under Alternative 2 Qualification Options.

Comparison of Options	Number Qualifying Under the More Liberal of the Two Options	Difference in Total Number of Permits Qualifying	Number of Permits That are Affected by Choice Between Compared Sub-Options	Number Qualifying under First Option and Not Second Option	Number Qualifying under Second Option Not First Option	Number Qualifying Under both Option
1 vs. 2	15	4	4	4	0	11
1 vs. 3	15	2	6	4	2	11
2 vs. 3	11	2	4	1	3	10

Endorsement Limit Option

For each of the permits that would qualify, there are two endorsement limit options under consideration: Endorsement Limit Option 1, which would grant each qualifying permit the average percent of the sablefish north trawl allocation caught with fixed gear for years fished through the control date (i.e., does not include years with zero activity in gear switching) and Endorsement Limit Option 2, which would be 4.5 percent of the trawl allocation (i.e. same as the current vessel limit). Since Endorsement Limit Option 1 is individualized to each permit based on an average, vessels might not be able to maintain their previous gear-switching levels since their average will be lowered by the elimination of the opportunity to harvest at levels comparable to their historic above average years. Since Endorsement Limit Option 2 is the maximum amount of QP a vessel is able to land, any vessel fishing under an endorsed permit should be able to gear switch in amounts equal to or above its gear-switching history, unless the vessel chooses to share the permit with another vessel (if such sharing is allowed under the final alternative).

Figure 4 shows the number of permits that would qualify under each Qualification Option by the approximate size of the gear-switching limit that each would be granted under Endorsement Limit Option 1 (grouped to preserve confidentiality). All five Qualification Options (three main options with two recent participation sub-options) would have three permits receiving more than a three percent gear-switching limit. Option 1 (with and without the sub-option) would qualify the greatest number of permits at an endorsement limit of less than 1.5 percent.

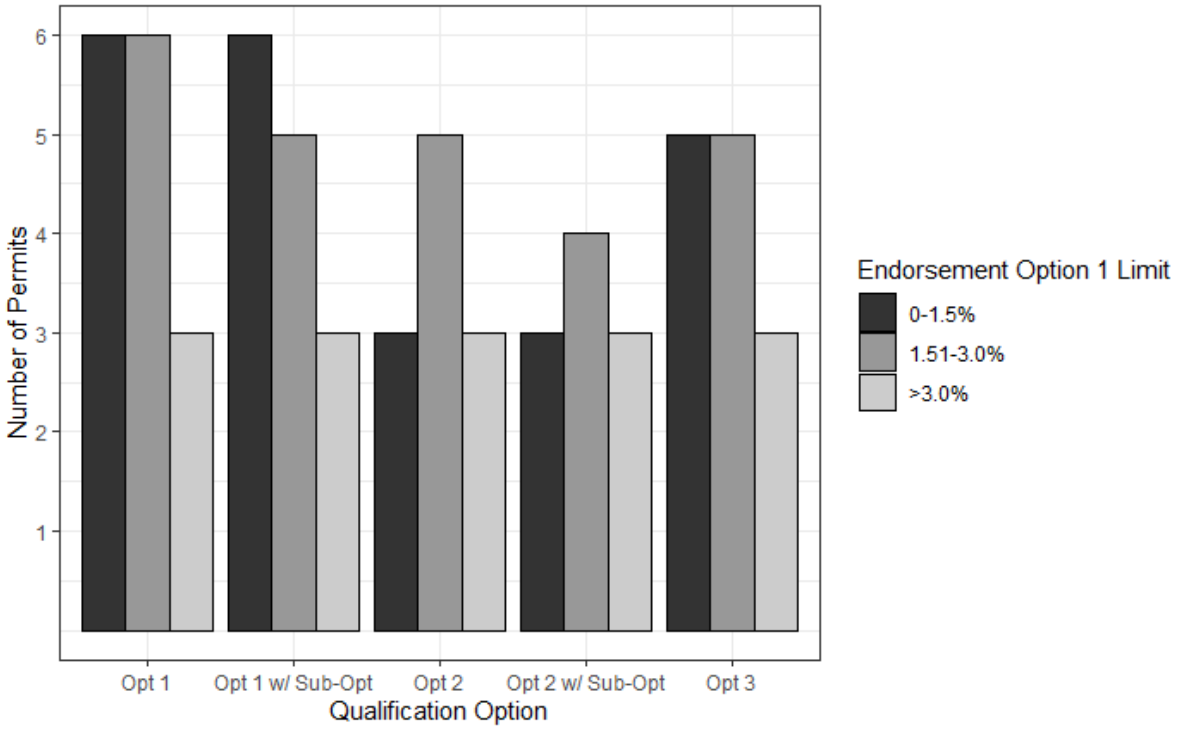


Figure 4. Number of permits by Qualification Option and the range of gear-switching limits that would be granted under Endorsement Limit Option 1 (average of active gear-switching years)

Looking historically, Table 16 below hind casts the number of permit/year combinations, by qualifying option (and sub-option), for which permits would have exceeded or been within the Endorsement Limit Option 1 limit for each permit, compared to the total number of permit/year combinations that the endorsed permits have fished. It appears that some very low permit/year combinations pull down the averages on which the endorsement limits would be based, such that the median trips are above the average on which the Option 1 limits would be based. That the median is higher than the average implies that there are more permit/year combinations that would be constrained by the Option 1 limit than accommodated by it. Between 52 and 59 percent of the permit/year combinations would not be fully accommodated and, generally, the more vessels that qualify the greater the proportion of permit/year combinations that would not be accommodated by Option 1 limit.

Table 17. Hindcast of the number of permit/year combinations that would be above Endorsement Limit Option 1 (average gear-switching amount for years fished), (2011-2018).

Option	Qualification	Total Qualifiers	Number of Permit/Year Combinations from 2011-2018…		
			Total (2011-2018)	Within the Endorsement Limit Option 1 Gear-Switching Limit	Exceeding the Option 1 limit per vessel
1	10,000 lbs per year in at least three years between January 1, 2011 and September 15, 2017	15	120	49	71
	… and participated in at least one year between 2016 through 2018	14	112	47	65
2	30,000 lbs per year in at least three years between January 1, 2011 and September 15, 2017	11	88	40	48
	… and participated in at least one year between 2016 through 2018	10	80	38	42
3	30,000 lbs per year in at least three years between January 1, 2011 and September 15, 2017 and participated in at least one year between 2016 through 2018 or caught 90,000 lbs of north sablefish cumulatively across three years from 2014 to 2018, with at least one gear-switched landing in each of those three years.	13	104	43	61

While Endorsement Limit Option 2 would allow a permit to be used to catch up to 4.5 percent of the trawl allocation (the same as the current annual vessel limit), there have actually been few permits historically that have been used to catch more than four percent of the trawl allocation in any year with trawl or fixed gear. Overall, there have been 15 instances from seven permits that have caught more than four percent of the trawl allocation between 2011-2018. Of these seven permits, all but one would qualify for an endorsement under all five qualification options shown in Table 12. The permit that would not qualify has been mostly latent from 2011-2019. Figure 5 below shows a histogram of the number of permit/year combinations of those permits that would qualify under at least one of the options above (total of 17 permits) by percentage of the trawl allocation caught. Based on these trends, it is likely that few vessels would approach the Endorsement Limit Option 2 gear switching limits (4.5 percent) unless there was a substantial increase in the incentives for gear switching.

The vessel gear switching opportunities associated with a gear switching endorsement will also depend on rules regarding the application of limits when a permit is transferred to a different vessel. Since the gear-switching limits apply to the endorsed permits (rather than the vessel) and if permits can be transferred between vessels, some vessels that want to do more gear switching than can be accommodated by the limit for non-endorsed vessels (0.5 percent) might be able to lease an endorsed permit from a vessel that is not fully utilizing it.[5] Whether a vessel would be able to expand its gear-switching opportunity by sequentially fishing under multiple gear-switching endorsed permits is a question the SaMTAAC left open for further deliberation. Related to that determination is whether a single endorsed permit might be fished sequentially on several vessels.

[5] The gear switching allowed by leasing an endorsed permit would be in place of catching against the 0.5 percent limit available for vessels with non-endorsed permits, since the alternative does not allow a vessel to fish against both the 0.5 percent and an endorsed permit limit in the same year.

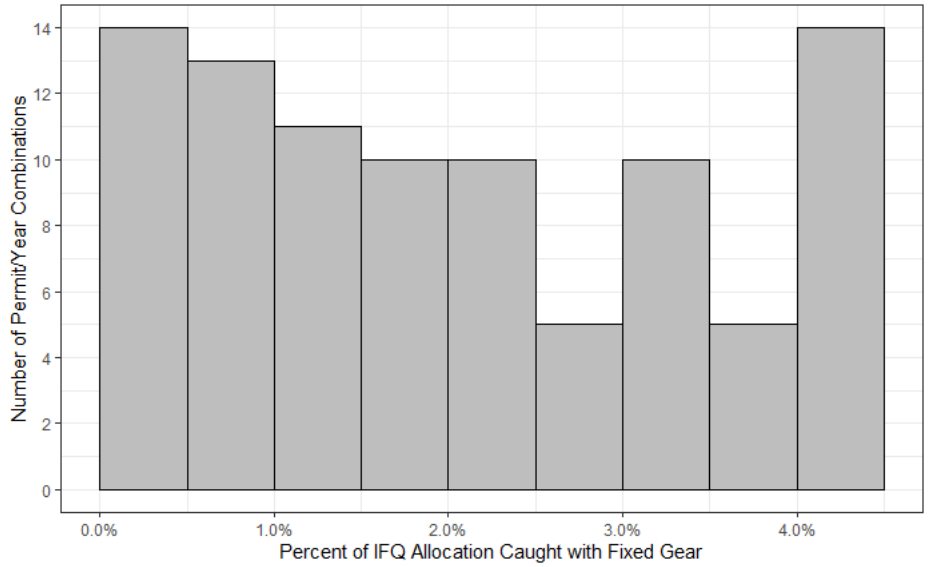


Figure 5. For permits that would qualify under any options (or sub-option), number of permit/year combinations by the percent of sablefish north IFQ allocation caught with fixed gear, 2011-2018.

For those permits that would not qualify for an endorsement, each would have a gear-switching limit of 0.5 percent of the trawl allocation. Table 17 shows the number of permits whose average active catch for years fished (i.e. does not include years without activity) would be above or below the 0.5 percent limit of the 2020 allocation (29,066 lbs). As shown, on average among all the options, less than 25 percent of non-qualifying permits would have had averages below the 0.5 percent limit.

Table 18. Number of non-qualifying permits whose average catch in active gear-switching years would be within the 0.5 percent proposed limit (29,066 lbs based on the 2020 allocation) for non-endorsed permits.

Option	Qualification	Number of Permits whose Active Average Catch is…	
		Within 0.5 Percent Limit	Exceeds 0.5 percent limit
1	10,000 lbs per year in at least three years between January 1, 2011 and September 15, 2017	4	19
	… and participated in at least one year between 2016 through 2018	4	20
2	30,000 lbs per year in at least three years between January 1, 2011 and September 15, 2017	7	20
	… and participated in at least one year between 2016 through 2018	7	21
3	30,000 lbs per year in at least three years between January 1, 2011 and September 15, 2017 and participated in at least one year between 2016 through 2018 or caught 90,000 lbs of north sablefish cumulatively across three years from 2014 to 2018, with at least one gear-switched landing in each of those three years.	6	19

Endorsement Expiration Options

There are two options for when the gear switching endorsements would expire: Option 1 would have the endorsement expire when the permit is transferred to a different owner or a new owner is added to the existing permit ownership while Option 2 would maintain the endorsement regardless of transfer or ownership change (i.e. no expiration). The expiration provision will affect the long-term impact of the alternative on gear switching. Future analyses could look at data on the owner-on-board requirement implemented for limited entry fixed gear (LEFG) tier permits (which expires with the addition of a new owner to permit ownership), which is the closest comparable provision in the groundfish fishery. This analyses may be able to provide some kind of an indicator of the rate at which the exemptions might expire under Option 1.

Gear Switching Limit Overage Options

The endorsement limits described above would be for total catch, or landings plus discards with associated survival credits applied. Under Alternative 2, when a vessel reached the limit assigned to the permit, it may retain and sell any sablefish caught in excess of that limit, but may not deploy non-trawl gear on any IFQ trips for the remainder of the year. As under No Action, all sablefish mortality must be covered with QPs, even those over the limit. Any QP a vessel uses for gear switching in excess of its limit will be deducted from the gear switching limit for the vessel's permit in the following year. This is similar to what occurs if a vessel exceeds an annual vessel limit in a given year. In that case, the vessel may not fish again in the IFQ sector and any overage must be covered in the following year.

There would be some administrative expense associated with this activity in that the reduced gear switching allowance for the permit would have to be tracked, including tracking it with the permit if the permit is transferred to a different vessel. Limit Option 1 includes individualized permit limits but not Limit Option 2. This provision would create the potential for individualized permit limits for Limit Option 2 as well. All of this would likely add to the administrative costs. A sub-option would not reduce the limits by the overage amount in the following year.

Other Aspects of Alternative 2

Sequential Permit Registration: The SaMTAAC agreed that vessels using non-endorsed permits would not be able to fish multiple non-endorsed permits during the same year in excess of the 0.5 percent limit. Further, vessels could not register an endorsed permit and a non-endorsed permit in the same year to increase their overall gear switching limit. Both of these instances were counter to the idea of limiting gear switching. However, the SaMTAAC did not reach consensus on whether vessels could sequentially register multiple endorsed permits within the same year, while still being limited by the annual vessel limit of 4.5 percent.

Combination of Permits: If two gear switching endorsed permits are combined, the permit with the larger of the two limits would be included on the resulting permit. Under Endorsement Limit Option 2, where both limits would be 4.5 percent, only one of the 4.5 percent limits would

survive the combination. Thus, under either endorsement limit option, if two permits are combined, the total potential gear switching amount would be reduced.

2.5 Alternative 3

Section Summary: Alternative 3 would allow gear-switched landings of sablefish north by vessels that qualify for an active trawler designation or through an exemption to the requirement for such a designation based on a vessel's gear-switching history, which would be attached to an LE trawl permit. Vessels fishing under an exempted permit could gear switch the greater of 0.6 percent of the trawl allocation or the amount of QS owned as of and since the control date. The following summarizes a few highlights from this section:

- *An average of 86 percent of vessels using trawl gear to make IFQ landings north of 36° N. lat. would have received an active trawler designation in any one year from 2011-2019.*
- *Of the 40 vessels with some gear switching history, 12 also used trawl gear at some point in the 2011-2019 period. Ten vessels used trawl and fixed gear in the same year.*
- *Between 11 and 12 vessels have gear-switching history that would qualify them to designate a permit that would receive the exemption. Of the vessel owners receiving an exemption for a permit, four would meet the QS account ownership criteria and so be able to gear switch their own northern sablefish QS.*
- *Based on the proposed limits, the total gear-switching amount for all vessels exempted from the active trawl requirement would likely be between 8.85 and 9.45 percent depending on the option selected.*
- *Of those vessels with some gear-switching history that would not receive an exemption, few have historically trawled and so would not likely qualify as an active trawler, unless they shifted more strongly into the fishery with trawl gear.*

Under Alternative 3, vessels could harvest sablefish north with fixed gear by meeting the criteria for the active trawler designation or by receiving an exemption for a permit based on vessel gear-switching history.

Qualifiers for Active Trawler Designation

For the active trawler designation, vessels would receive the designation as soon as they met the landings requirement, and the designation would last for the remainder of that year and the entirety of the following year. To qualify, a vessel would have to use trawl gear to land at least six catch share landings that meet at least one of the two qualifying criteria:

a. In the area north of 40° 10' N. lat., 18,000 lbs of any IFQ species
b. In the area between 36° N. lat. and 40° 10' N. lat., 9,000 lbs of any IFQ species.

Based on those qualifications, the vast majority of vessels with shorebased IFQ trawl landings would qualify each year as shown in Figure 6 below. On average, 86 percent of vessels with an

IFQ landing from north of 36° N. lat. would qualify in a given year (making them also eligible in the following year). Vessels would be able to gear switch up to one percent of the trawl allocation, however, the vessel limit could be adjusted downwards if the total gear-switched catch exceeded 10 percent in a year (a "backstop percentage" for trawl vessels).

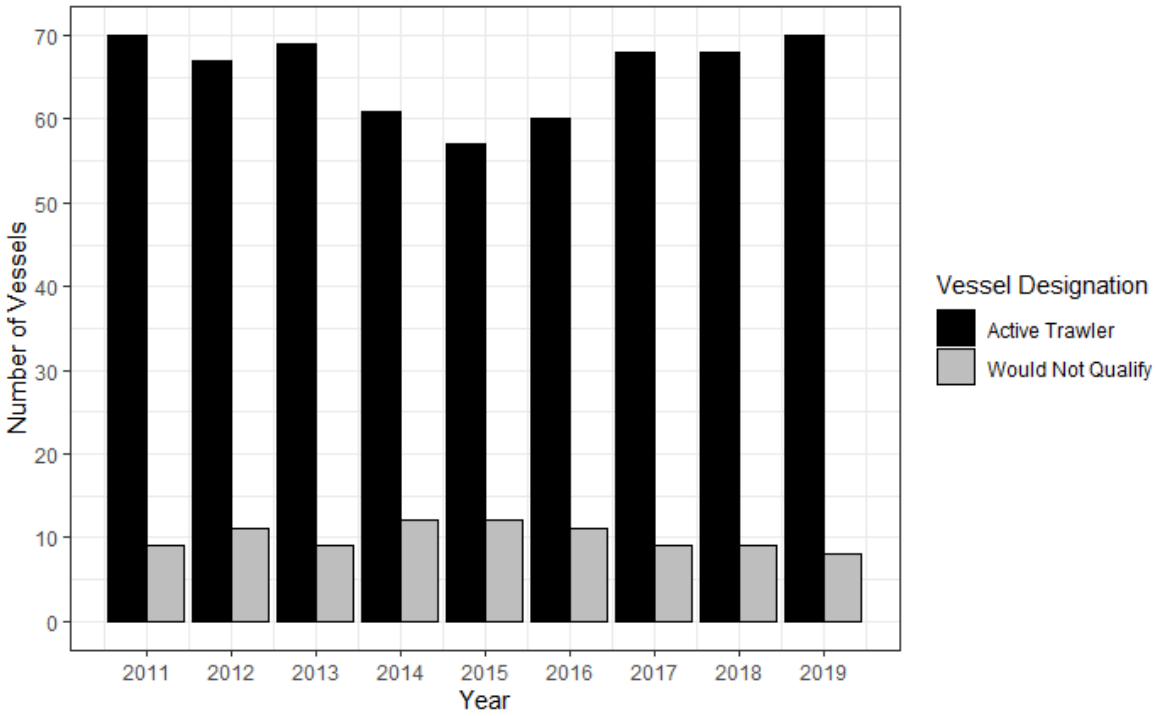


Figure 6. Number of vessels that would or would not have qualified as an active trawler in a year, 2011-2019.

Qualifiers for Exemption to Active Trawler Requirement

Vessels with gear-switching history could qualify an LE permit for an exemption from the active trawler requirement. Table 18 below shows the number of vessels that would qualify under each option. Eleven vessels would qualify under both proposed options. Under Option 2, which includes Option 1 but would add an opportunity to qualify based on more recent cumulative catch, one additional vessel would qualify. Similar to the tables provided for qualifiers under the other alternatives, the average catch as a percentage of the 2020 allocation is provided to show historical participation levels. Additionally, there were two vessels that first entered the fishery in 2019 that would not qualify for an exemption.

Under the exemption, vessels could use fixed gear to take the greater of 0.6 percent of the northern sablefish allocation or the percent of northern sablefish QS the vessel owner has owned as of and since the control date (there must be 50 percent common ownership between the vessel and the account). Using 2019 vessel account information for each vessel, under both qualification options, there are four vessel owners that own QS; however, in some cases, the amount they own would

not allow them to gear switch at levels above 0.6 percent. The total amount of QS owned by the owners of all four of those vessels is 4.65 percent.[6]

Under Alternative 3, there is also a "backstop percentage" of 10 percent for exempted vessels, which is the greatest amount of the IFQ sablefish north allocation that could be taken with fixed gear by vessels with an exemption. The 0.6 percent value may be adjusted downward if, prior to finalization of this alternative, it appears that exempted vessel landings with fixed gear will greater than 10 percent. In this case, the 0.6 percent limit, combined with the 4.65 percent for vessel owners that would be limited by the amount in their QS account, would keep the group of exempted vessels under the 10 percent cap and a need for a downward adjustment is not anticipated.

Compared to what gear switching vessels averaged historically, the limits would substantially reduce the level of gear switching (for qualifying vessels, the exempted vessel limits are expected to total 8.85 percent for Option 1 and 9.45 percent for Option 2). At the same time, the impact to each individual vessel would vary. Of the 79 distinct combinations of landing year and exempt vessels fishing IFQ sablefish north, there are only nine vessel-year combinations (less than 12 percent) where the actual take (i.e. total mortality) of fixed gear sablefish was below the proposed limit for the exempted vessel (either 0.6 percent or the QS limit). Six of the 12 vessels that could receive an exemption under at least one of the options would have exceeded the proposed limit (the 0.6 percent limit or the QS based limit applying to the vessel) in each year that they participated in gear switching. Of the remaining six vessels, three had one year of participation where the total would have been covered by the proposed limit for that vessel while the other three had two years, accounting for all nine instances of harvest that would be accommodated by those vessels' proposed limits. Overall, there is only one qualifying vessel whose average gear-switching activity in active gear-switching years between 2011-2019 would be covered by the proposed limit (the 0.6 percent limit or the QS based limit applying to the vessel). All of the other vessels' averages exceed the proposed limit by 0.32 to 3.4 percentage points. Based on the 2020 allocation, on a per vessel basis, the proposed limits would result in landings between 18,000 and almost 200,000 pounds lower than the vessel's average gear-switched landings and an associated exvessel revenue of between $51,000 and over $553,000 lower (using average fixed gear price for sablefish north from 2011-2018).

[6] This amount could go down over time if any of these owners divest themselves of QS. Additionally, there is a small possibility that there are undetected ownership relationships that would qualify some allow some additional owners to receive limits based on their QS holdings

Table 19. Number of vessels that qualify or do not qualify under each exemption option for Alternative 3, the percentage of vessels with gear-switching landing history from 2011-2018, and percent of the 2020 allocation based on average catch (2011-2018; all years).

Option	Qualification	Qualifying Vessels				Non-Qualifying Vessels			
		Number of Vessels	Number Qualifying Under All Options	% of Vessels with Gear-Switching History	% of 2020 Allocation based on Average Catch 2011-2018	Number of Vessels	Number Not Qualifying Under All Options	% of Vessels with Gear-Switching History	% of 2020 Allocation based on Average Catch 2011-2018
1	30,000 lbs of northern sablefish trawl QPs per year in at least three years between January 1, 2011 and September 15, 2017.	11	11	28.9%	20.3%	27	26	71.1%	6.9%
2	30,000 lbs of northern sablefish trawl QPs per year in at least three years between January 1, 2011 and September 15, 2017 or 90,000 lbs cumulatively across three years from 2014 to 2018, with at least one gear-switched landing in each of the three years.	12		31.6%	20.5%	26		68.4%	6.6%

The 18 gear switching vessels that did not qualify for an exemption and did not have any history of trawling from 2011-2019 (i.e. only gear switched) would likely need to re-outfit their vessel with trawl gear in order to continue gear switching. Table 19 below shows the number of vessels that would not qualify for an exemption under either option and have never historically trawled by average amount of fixed gear sablefish landings and number of years of participation from 2011-2019.

Table 20. Average pounds landed (and corresponding percentage of the 2020 allocation) and number of years of participation for those vessels that would not qualify for an exemption under Alternative 3 (either option).

Years Participating	**Average Lbs Landed (Corresponding % of 2020 allocation)**	
	0-34,879 lbs (0-0.6%)	**+34,880 lbs (+0.6%)**
1	5	3
2	<3	3
3+	3	

Active Trawl Exemption Non-Qualifiers: Status as Active Trawlers

For those vessels that would not qualify for an exemption, the only avenue for gear switching would be to lease an exempted permit or qualify as an active trawler. From 2011-2019, 12 vessels used both trawl and fixed gear to catch sablefish north sometime during the period. Of the 12, only ten used both gears in the same year and of those ten only three gear switching in multiple years (Table 20). These ten vessels had eighteen instances (year/vessel combination) of fixed gear harvest of sablefish north from 2011-2019, with fourteen of the eighteen instances occurring in years the vessels used both trawl and fixed gear. Of those eighteen occurrences, nine vessel/year combinations (from five vessels) would have been in excess of the one percent limit provided for exempted trawlers.

Eight of those ten vessels would have qualified as an active trawler in at least one year between 2011-2019, with two vessels qualifying as an active trawler in every year over that period. However, only five have used fixed gear to catch sablefish in the year they would have qualified as an active trawler. All five would have qualified in the previous year and thus have been eligible to gear switch in the entirety of the year in which they did gear switch (vessels which qualify as an active trawler are able to gear switch through the remainder of the year in which they qualify and all of the following year). Of those five, three landed more than the one percent gear-switching active trawler allowance in at least one of years they gear switched. Of the remaining three of the eight vessels that would have qualified as an active trawler in at least one year, each would have qualified as an active trawler in at least one year but not for the year in which they gear switched.

Table 21. Summary of data on vessels that used trawl gear and gear switched (2011-2019) with respect to their ability to qualify as active trawlers and whether their historic participation would be accommodated by the one percent limit for active trawlers.

Vessels Using Both Fixed Gear and Trawl	**Count**
Total Vessels Using Trawl and Fixed Gear in the 2011-2019 Period	12
Total Vessels Using Both in the Same Year	10
Total Using Both in Only 1 year	7
Total Using Both in More than One Year	3
Vessels Using Both that Would Qualify as an Active Trawler	
Total in At Least 1 year	8
Total Qualifying in Every Year	2
Total Qualifying ***for*** the Year that Both Gears Were Used	5
Total that Exceeded the 1% Limit in the Year they Qualified	3
Total Vessels that Used Both Gears in the Same Year and Exceeded 1% Exempted Trawl Limit in At Least 1 year	5
Total Instances: Year/Vessel Combination in Which Both Were Used) (a single vessel could have multiple instances)	18
Total Instances in Excess of the 1% Exempted Trawl Limit	9

Exemption Expiration Options

For those vessels that qualify for an exemption, the exempted status would be assigned to a trawl permit at the time of implementation. The exemption on that permit would expire upon the transfer of the permit to a new owner. A sub-option is also proposed which would make the exemption expire upon the transfer or 12 years after fishing under the regulations start, whichever comes first. As described above for the Alternative 2 expiration of gear switching endorsements, the rate of expiration of LEFG tiered permit owner-on-board exemptions will be examined as an example of how rapidly expirations based on changes in permit ownership occur. Some of the tiered permit owner-on-board exemptions have been in place for around 20 years. On that basis, the 12-year mandatory expiration would provide a more time definite limit on the duration the exemption and the associated administrative costs. At the same time, the 12-year expiration might disrupt plans by some of those who have invested in the fishery before they are ready to transition out of the fishery or fishing.

QS Account Expiration Exceptions

If a vessel owner receives an exemption from the active trawler requirement and is entitled to a gear-switching limit based on northern sablefish QS, there is an opportunity for it to change QS accounts without losing that opportunity. The provision requires that in order to base a gear switching limit on the QS owned, there must be at least 50 percent common ownership between the vessel and QS account and the QS must have been owned continuously since the control

date. Before or after program implementation, if a vessel owner acquires a new QS account and transfers its northern sablefish to that account, it can maintain the higher limit associated with ownership of that QS so long as the 50 percent common ownership between the vessel and old QS account continues with the new QS account. This transfer to a new QS account can occur either before or after implementation. Tracking this provision would require some administrative effort, but based on the analysis the number of vessels and QS accounts for which common ownership would need to determined are relatively few. A total of four vessels that might qualify have common ownership with a QS account.

Gear Switching Limit Overages

The gear switching limit overage provision under Alternative 3 is the same as described under Alternative 2 above.

Other Aspects of Alternative 3

Vessel Replacement Exception: The manner in which the provisions of this alternative are specified allow a permit to be transferred to a different vessel without losing the active trawler exemption and access to the 0.6 percent minimum limit provided for all vessels with exempted permits. Additionally, the vessel replacement exemption allows a transfer to a different vessel while maintaining access to the higher limit provided through common ownership between a vessel and QS account. If after implementation, the common ownership that meets the exemption requirement acquires another vessel, divests itself of previous vessel, and maintains ownership in the QS account, then the common ownership linkage between the new QS account and previous vessel will qualify the new vessel.

On the one hand, provisions that allow use of the permit with a different vessel potentially allow a permit to be leased out and used for gear switching (though a permit that is leased out would only be able to fish against up to the 0.6 percent gear switching limit because there would not be common ownership between the vessel and the QS account). However, it also reduces regulatory burden and administrative costs that would be associated with development and implementation of regulations to allow hardship exceptions for lost vessels or vessel upgrades for safety or other reasons.

Limits for Transferred Permits: Gear switching limits are associated with permits, therefore, if a permit is transferred mid-year, then the catch prior to the transfer still counts towards the gear switching limit.

Gear Switching Limits for Active Trawlers with Exempted Permits: If a vessel qualifies as an active trawler and has an exempted permit, the higher of the two limits will apply for that vessel.

3.0 Initial proposal for estimating total gear switching expected—long and short-term.

Under all alternatives, the amounts of gear switching allowed are capped by some maximum built into the structure of the alternative, but the actual amounts expected are likely to be lower than that theoretical maximum. Different estimation approaches were explored to assess the expected levels of gear switching. In developing estimation approaches that are based on past fleet activity and interpreting and relying on those results, the following factors were and need to be considered:

- Levels of gear switching over the last several years (2015-2019) have stabilized at around 33 percent of the available QP and number of gear switching vessels and permits has been relatively stable at between 14 and 16 over that same time period. There was substantial fluctuation in amount gear switching and numbers of participants from 2011-2014 and in number of participants from 2011-2014. On this basis, it might make sense to use recent levels of activity as an indicator for future levels of gear switching. However, estimates based on such an approach would not include projections for activity of potential qualifiers that have not gear switched during the more recent period.
- While more recent years have been relatively stable in terms of amount of gear switching, in 2019, exvessel and QP prices dipped well below the 2011-2018 range (exvessel prices were at the lower end of that range in 2018). This may be an early indication that conditions in the fishery that are believed to impact levels of gear switching are changing.
- For 2021, the trawl allocation of sablefish will increase by about 1.3 million pounds (23 percent) compared to 2020. This increase in available pounds could result in market place dynamics that could either increase or decrease the amount of gear switching. For example, compared to 2018, the 2019 sablefish allocation increased to its highest level during the catch share program (continuing a general upward trend), sablefish exvessel price declined to its lowest level, and northern sablefish QP price declined to its lowest level but the there was an increase in the amount and total percentage of the trawl allocation taken through gear switching.
- Development of markets for other trawl species will also increase demand for sablefish QP and sablefish QP prices.
- Opportunities in other fisheries in which gear switching vessels can participate will affect the relative income available from gear switching as compared to those other fisheries and consequently the distribution of effort across the fisheries.

These conditions affect the choice of approach for making estimations of future gear switching and need to be taken into account in interpreting and relying on estimates. It may be appropriate to use several different methods to make estimates in order to provide more of a sense of the range or possible outcomes.

Alternative 1

At the simplest level, the maximum amount of gear switching under Alternative 1 would be 30 percent under Gear Specific QP Option 1 or 10 percent under Gear Specific QP Option 2 (although

the latter would likely be linked with the inclusion of an opt-out provision). The inclusion of the opt-out and conversion date make for many different possibilities in terms of how much unrestricted QPs would be available and the amount actually used for gear switching. The opt-out provision would allow more gear switching over the short-term (until the opt-out out statuses expire, as is specified to occur when a QS account expires or a new owner is added). The conversion date would cause a mid-year or post season increase in the amount of unrestricted QP available and be in place for the long-term.

Without either an opt-out or conversion date provision, the maximum amount of gear switching will be capped by Gear Specific QP options. However, the amounts of gear switching expected will partially depend on the degree to which the unrestricted QP, spread out among all QS accounts, will be consolidated into the QP accounts of vessels that are gear switching. Sablefish QS is currently spread across 129 QS accounts (as of February 18, 2020) and this number could either increase or decrease in the future. Consolidation into gear switcher accounts will be depend on the costs of contacting all QS account owners and arranging for the unrestricted QP to be transferred. These transactions involve time and expenses for both the seller and the buyer. Over time, industry might make adjustments that would reduce costs. For example, a fishermen, fishermen's organization, or auction might establish a service that would facilitate such consolidation. How this will play out over the long-term is difficult to predict. Therefore, predictions of the total amounts of unrestricted QP (either 10 percent or 30 percent) that will be effectively available for gear switching may have substantial uncertainty. However, other information beyond specific predictions, may help evaluate the likely outcomes. For example, the number of accounts and amounts of unrestricted QP that would be distributed to each account for each account may provide some sense of the incentives and effort that would be entailed in consolidating those QP into the accounts of vessels that gear switch (assuming the current distribution of northern sablefish QS).

Inclusion of an opt-out provision or conversion date will change the total amount of unrestricted QP issued and amount of gear switching expected. Under an opt-out provision, over the short-term (until the opt-out privilege for each account expires), there would be a number of accounts receiving all of their QP as unrestricted. There are several approaches that might be taken in developing indicators of the amount of unrestricted QP that could be issued to opt-out accounts. The first would be to estimate the amount of unrestricted QP allocated to opt-out accounts based on the number of accounts potentially opted out times the maximum amount of QS that could be moved into the accounts (three percent of the northern sablefish for each account). This approach is based on the opt-out specification that unrestricted QP would be issued for any QS moved into an opted out QS account after initial implementation. However, this approach would likely be result in a significant overestimate of what might be reasonably expected. Further, under some qualification sub options the estimate would cap out at 100 percent of the available QS.

A second approach might be to assume that those with opt-out opportunities will designate those accounts with the largest amounts of sablefish QS as the opted out accounts. This approach would assume that individuals would arrange contracts, essentially selling the opt-out designation to other accounts in return for financial compensation or commitments on future access to the opted out

QP. This also likely results in an overestimate as some qualifiers are likely to opt-out their own accounts over which they have more control rather than an account owned by someone else.

A third approach would be to assume that those qualifying to opt-out will either opt-out their own QS account, or, if they do not have a QS account, then the QS account from which they have historically acquired the greatest amount of the sablefish QP. This approach requires some investigation of the linkages between permits and QS accounts based on either common ownership or trading history. The trading history approach would utilize a methodology developed by the Washington Department of Fish and Wildlife, which is described in reports provided to the SaMTAAC at its October 2019 (SaMTAAC Agenda Item E.2, Attachment 1, pp. 62-74) and January 2020 meetings (SaMTAAC Agenda Item B.2, Attachment 1, pp. 47-53). The approach seems the most prudent as a first estimate, but the following factors will likely cause the outcome to vary from the estimate. First, whatever QS accounts are designated (those owned by a gear-switching entity or owned by those from whom they acquire QP), over the duration of the program, there will be opportunity to add more QS to those accounts and receive unrestricted QP for that additional QS. Second, an individual with an opt-out privilege that does not have a QS account might choose to open one, designate it as the opt-out account, and add QS to it in the future (up to the maximum of three percent). Note that adding QS to an opted-out account would not necessarily mean acquiring complete ownership over that QS. There could also be other creative strategies employed. For example, individuals with opted out accounts could "rent out" space in their accounts to hold QS for others, the QP for which would then be issued as unrestricted QP. Whatever the outcome, over time, these accounts will expire and the amount of unrestricted QPs issued will be either 10 percent or 30 percent to each account, regardless of the option selected.

For the conversion date, all QP become unrestricted toward the end of the year and the main question is the degree to which limiting the amount of unrestricted QP early in the year will limit gear switching or otherwise benefit the trawl sector. Using historical data to assess the typical amount of gear switching occurring prior to a conversion date and for the year as a whole, in the context of the amounts of gear specific QP to be issued, could provide an estimate of the amount of unrestricted QPs likely to be used in gear switching assuming no-opt-out.

Assessments of the amount of unrestricted QP that would be issued and likely amount of gear switching would need to be made under combinations of Gear Specific QP Options, opt-out provisions and conversion dates.

Alternative 2

Gear switching under Alternative 2 could come from two sets of participants: those with endorsed permits and those with non-endorsed permits. Overall, the maximum amount of potential gear switched quota would theoretically be the number of endorsed permits times the endorsement limit plus the number of non-endorsed permits times the 0.5 percent limit. However, this is likely an overestimate given that it is highly unlikely that every non-endorsed permit would be utilized to gear switch given that the total number of gear-switching participants has stabilized to 15-16 vessels/permits in recent years (2016-2019). Outside of potential gear switching by non-endorsed permits, the maximum for endorsed permits could be assessed as the total of such permits times

their limits. Under Limit Option 2, the limit for the permit would be 4.5 percent, which would result in a maximum of 45 to 67.5 percent depending on the qualification requirement option selected. Again, it is likely that this would be an overestimate as there have been few permits, using either fixed gear or trawl gear, that have exceeded four percent since 2011.

Because these maximums are likely unrealistic based on current fishery conditions, staff is considering a gear switching projection method based on an evaluation of the historic amounts of gear switching for each permit expected to qualify. In pursing this method there are three considerations: first whether to evaluate historic participation in terms of pounds caught or percentage of the trawl allocation taken; second, whether to include the zero years in determining a permit gear switching projections; and third whether and how a bootstrap approach may be applicable.

As mentioned, the purpose of looking at past levels of gear switching is to try to make a projection about the likely level of gear switching in the future given the new constraints. A first approximation might be to look at the permits that would qualify, their past level of participation and then assume that level will be continued into the future. This approach for making a projection would be subject to the challenges identified in the introduction to Section 3.0. Past participation can be measures as an absolute number of pounds or as a percentage of the trawl allocation. The following are some factors to be considered in deciding which of these approaches should be used.

Past percentages of catch might be better than past pounds as a predictor of future gear switching if a vessel's catch is likely to vary with the size of the trawl allocation. When the allocations go up, a vessel's catch might be expected to increase:

- For gear-switching vessel owners that own their own QS
- For gear-switching vessels that lease their QP, if the profit per pound of sablefish goes up. This might occur if the price for acquiring an additional increment of QP goes down due to the increase in QP supply, while exvessel price of fish does not go down as much despite the increase in the allocation (as might be expected to the degree that local sablefish prices are driven by global market prices). Note that in recent years, the trawl allocations have gone up, increasing the amount of QP available and the QP prices have gone down but the exvessel prices have also declined substantially.
- For gear switching vessels that tend to fish close to the annual vessel QP limit, assuming that the limit is constraining their harvest (the size of that limit would be expected to go up with an increase in the trawl allocation).[7]

Basing projections on the percentage of the trawl allocation utilized would scale the projection by the amount of QPs available in a given year. However, with the increasing ACLs in the coming bienniums, vessels may not be able to reach the percent attainment they achieved in past years

[7] For example, the trawl allocation in 2013 was 4.03 million pounds compared to 5.64 million in 2019. This corresponds to an annual vessel limit of 181,582 in 2013 compared to 256,086 in 2019- an increase of over 80,000 lbs. A vessel therefore was more limited in 2013 compared to 2019 in the absolute number of pounds they could catch.

when quotas were lower. The past poundage of catch might be better than past percentages as a predictor of future gear switching in the following circumstances.

- When an increase in the allocation does not increase the per pound profitability of an additional increment of gear switching activity (i.e. the availability of additional QP does not change the vessels incentive to do more gear switching).
- When a vessels gear-switching activity is constrained by other opportunities (e.g. expansion of gear switching would require reducing activity in another fishery that brings similar or greater profits).

Another dynamic to be considered is the effect of allocation changes on gear-switching projections and the expected activity of permits that have not been used recently but would qualify for an endorsement. On the one hand, if projections are based only on more recent periods, such permits would not be contributing to the projections. On the other hand, owners of such permits may try to capitalize on their endorsement by leasing the permit to a vessel interested in actively gear switching. However, given that under status quo all vessels have had an opportunity to gear switch at any time by acquiring any trawl permit, the restriction of gear switching opportunities to fewer permits would not be expected to provide a new incentive for vessels to acquire and gear switch the newly endorsed permits that had not recently engaged in gear switching. However, nonqualifying vessels may have some interest in those permits. Additionally, if changes in the economics of the fishery increase the incentive for gear switching, as could occur with changing ACL levels, gear-switching endorsed permits that have not recently been active could be transferred to vessels with a greater interest in gear switching. This illustrates one of the challenges of basing estimates on recent conditions.

The inclusion of zeros in either metric (absolute pounds or percent attainment) would also need to be considered. While the total number of vessels and permits has stabilized in recent years to around 15-16 units, there have been 40 vessels and 40 permits that have gear switched from 2011-2019. Depending on the qualification option selected, it is possible that a permit may qualify that has not gear switched in recent years; therefore, including the zeros may be more representative if that permit continues to operate similar to recent years. In fact, the inclusion of a permit that has not participated for many years could lead to an overestimation of future gear switching. However, with the implementation of a gear switching endorsement, those permits would become more valuable than a trawl endorsed permit without an endorsement- purely because they have an additional privilege associated with it. Therefore, permit owners may look to lease that permit to a vessel interested in gear switching. If that occurs, the gear switching levels associated with that vessel's permit might be greater than zero and may not be similar to the permit's history that qualified. At the same time, if a vessel has not been participating when any trawl permit could allow that participation, why would it lease a permit to participate just because it now has a gear switching endorsement.

The following modeling approaches will be explored to provide a feel for the range of outcomes that may be expected in the future. However, because future conditions may vary substantially from the past there is no certainty that the outcomes will be within the range from the models.

Modelling approach 1: bootstrap using percentages.

Modelling approach 2: bootstrap using absolute poundages.

Modelling approach 3: Look at the vessels that have been active in the last four to five years and their pattern of harvest. Look at the number of permits that would qualify. Assume that any vessel that has fished recently and qualifies for a permit will continue at its recent level into the future.[8] Assume that any vessel that has been recently active but did not qualify for an endorsement would acquire an endorsed permit and continue to fish at its recent level. If that leaves some permits unused (i.e. there are more permits issued to vessels that have not participated recently than there are vessels that have participated recently but would not qualify for a permit) assume that those permits would either: 1) remain unused, or 2) be used at the average projected for vessels participating in the last four or five years.

Utilizing a bootstrap simulation to develop a distribution of projections using a permits historic activity is similar to the methods used in the risk assessment of the at-sea sector's bycatch of constraining species and trip limit modeling used by the Groundfish Management Team. A benefit of the bootstrap is that it would provide the Council with a distribution of projections that could inform the Council in selecting an option that aligns with their risk tolerance level.

Staff has considered the following in applying a bootstrap method for the two endorsement limit options. Under Limit Option 1 (average of active gear switching years percentage from 2011 through the control date), if a year-attainment combination was sampled in excess of that permit's limit under Limit Option 1, then the permit would be assumed to take the limit. As an example, if in one simulation, GF12345 took 2.4 percent in 2013, but its limit under Limit Option 1 was 2 percent, then that draw would be forced to be 2 percent. For Limit Option 2, this method could still be used to provide a distribution of the likely harvest of endorsed permits; however, if multiple vessels are allowed to use a single endorsed permit, then it may increase the amount of harvest associated with that permit outside of the bootstrap's sample population. For example, with the limit of 4.5 percent and if only 10 permits qualify for an endorsement, owners of the five to six permits that gear switched in recent years but do not receive a gear switching endorsement might make a deal to share a permit with a vessel that typically only gear switches two to three percent of the allocation. A qualitative discussion of this likelihood of vessels using the same permit would need to be considered.

For those non-endorsed permits, considerations would need to be made on whether a 0.5 percent limit provides enough opportunity for vessels to gear switch (about 29,000 pounds in 2020). While this amount would be more than Tier 2 limit in the primary sablefish fishery (22,100 pounds in 2020), participation in the primary sablefish fishery is less expensive because vessels do not have to pay for observers, do not have to pay a cost recovery fee, and do not have to use quota to cover discarded catch. Based on preliminary analyses shown in Table 17, few nonqualifying permits' historic gear switched catch would be under the proposed limit. However, in the short term, with allocations increasing by approximately 23 percent (~1.3 million QPs) in 2021 compared to 2020

[8] Either or both percentage and pounds might be used to characterize recent levels of activity and make projections.

(which prior to 2021 was the highest available allocation in IFQ history), this could provide sufficient incentive with the 0.5 percent limit being ~36,000 lbs.

Over the long term, permits could either expire with transfer or ownership change or be maintained. If the latter option is chosen, the short term impacts would likely be similar to the long term impacts (i.e. no further reduction in possible gear switching). However, if the former option is chosen, the amount of potential gear switching would be less over the long term.

Alternative 3

Under Alternative 3, the maximum amount of gear switching that would be allowed is 20 percent- a 10 percent maximum for active trawlers and 10 percent maximum for exempted vessels. Based on preliminary examination of vessel landing history and ownership data, the maximum amount of the allocation that could be taken by exempted vessels in the short term would be 8.85-9.45 percent, resulting in a theoretical maximum of 18.85-19.45 percent.

Over the long term, the exemptions would expire, either upon transfer to a new owner or 12 years after implementation of this action, reducing the maximum amount of gear switching to 10 percent (from active trawlers). The actual level of gear switching by exempted vessels would depend on whether the opportunity provided for by the exemption (either 0.6 percent or the QS owned) was sufficient enough for those vessels to fish.

For the active trawlers, it is uncertain how many vessels would take advantage of the one percent allowance for gear switching. The one percent allowance could be adjusted downward if the amount of gear switching by active trawlers exceeds 10 percent in a year. Given recent trends, it is likely that few vessels will participate. Over the last nine years, there have been only 10 vessels that participated both as trawlers and gear switched in the same year. As noted in Section 2.5 above, five of those vessels had nine instances in excess of the one percent limit in the year they gear switched. There is not a particular reason to believe that trawl-gear vessel gear switching will increase with the restrictions on participation by non-trawl vessels (unless the reduced production by fixed gear vessels results in an increase price for fixed gear caught fish that then lures more trawl vessels into gear switching. However, assuming the low level of trawl gear vessel interest in gear switching continues, over the long term (as the QS exemptions expire), it is likely that gear switching will be minimal.