

Scientific and Statistical Committee's  
Economics Subcommittee  
Report on Analysis to Inform Selection of Initial Preliminary Preferred Alternative  
for Sablefish Gear Switching

Pacific Fishery Management Council  
Online Meeting

October 24, 2023

The Scientific and Statistical Committee's (SSC) Economics Subcommittee (ESC) met virtually on October 24, 2023 to review "Analysis to Inform Selection of Initial Preliminary Preferred Alternative for Sablefish Gear Switching." Jim Seger (PFMC) and Jessi Doerpinghaus (PFMC) presented the report to the ESC. The subcommittee appreciates the considerable amount of work done by the analysts to complete the analysis.

For several years, the Council has been discussing limiting the ability of participants in the groundfish IFQ fishery to use non-trawl gear. Non-trawl gear is used primarily to target sablefish and the use of non-trawl instead of trawl gear is referred to as gear switching. The purpose of limiting gear switching would be to provide more sablefish quota to fishery participants who use trawl gear. The hypothesized effect of providing more quota to trawlers is that catch of other species that are caught with sablefish in trawl gear (e.g., Dover sole and thornyheads) would increase, which would increase overall attainment.

At its November 2023 meeting the PFMC is scheduled to select a Preliminary Preferred Alternative (PPA) from four options (No Action, plus three Action Alternatives). Of these four options, two (No Action and Action Alternative 2: Gear-Specific Quota Pounds) have been identified as initial PPAs (iPPAs). The PPA identified at the November 2023 meeting would then be sent out with the analysis for public comment, after which the Council would select its final preferred alternative (FPA) at the March 2024 meeting.

The subcommittee understands that the purpose of the analysis reviewed by the subcommittee is to 1) determine whether gear switching is constraining catch of non-sablefish species with trawl gear and 2) to estimate the possible impacts of restricting gear switching to inform the selection of a Preliminary Preferred Alternative.

The subcommittee finds that the analysis is not conclusive regarding whether gear switching constrains harvest of non-sablefish species. The subcommittee finds that comparing effects between alternatives is problematic and hence whether limiting gear switching would substantially increase attainment of other trawl species is unclear.

*Summary of the Analysis and Subcommittee Conclusions*

Section 2.4 of the report analyzes whether gear switching currently limits attainment of non-sablefish species caught with trawl gear. This section discusses five possible factors that might limit non-sablefish attainment: 1) limited physical capacity (i.e., not enough vessels), 2) limited

market demand for non-sablefish species, 3) limited infrastructure (i.e., not enough processing capacity), 4) program design elements, and 5) gear switching.

The analysis is inconclusive regarding whether gear switching, or any other of these potential factors, has limited attainment of non-sablefish species. While the report provides detailed information on aspects of the catch share and limited entry fixed gear (LEFG) fisheries, the analysis lacks specific tests that would indicate support for or against a strong effect on attainment for any factor.

Section 2.5 of the report analyzes the likelihood that gear switching will limit future attainment of non-sablefish species caught with trawl gear. This section discusses seven possible factors, but the presentation and discussion with the subcommittee focused on three: 1) sablefish market prices, 2) conditions in crossover fisheries (particularly LEFG groundfish), and 3) new entrants and effects of control date.

The analysis is inconclusive regarding whether gear switching, or any other of these potential factors, will limit future attainment of non-sablefish species. While the report provides detailed information on aspects of the catch share and limited entry fixed gear fisheries, the analysis lacks specific tests that would indicate support for or against a strong effect on future attainment for any factor.

Section 7, an Appendix to the main report, analyzes the impacts of the proposed action across several impact types. In some cases, the report analyzes the impacts of specific alternatives and in other cases, analyzes the impact of no-action versus any action. The types of impacts included physical (i.e., effects on the seafloor from changes in bottom trawl effort, section 7.2), biological (section 7.3), harvest, ex-vessel revenue, and attainment (section 7.4), efficiency (or rather, net revenue, section 7.5), vessels and vessel groups within the fleet (qualitative analysis of some of the differences in operational impacts between different vessel types, section 7.6), recent and future new entrants (section 7.7), permit and quota share owners (section 7.8), crew (section 7.9), fishing communities (a qualitative discussion of existing landings distribution and possible general effects, section 7.11), governance issues (section 7.12), and the general public and consumers (section 7.13).

Much of the subcommittee's discussion of the Appendix in section 7 focused on the analysis of impacts on harvest and ex-vessel revenue (section 7.4.1). The analysts estimate the change in harvest and ex-vessel revenue for four levels of gear switching for three historical years. The result is an estimate of the range of plausible effects on revenue and catch for a given level of restriction on gear switching. This range is generated under three assumptions: 1) gear switching constrains trawl harvest of non-sablefish species and trawlers do not change their species mixes in response to increased sablefish quota (Table 24); 2) gear switching does not constrain trawl harvest of non-sablefish species and trawlers respond to increased sablefish quota by increasing the proportion of sablefish in their species mix (Table 26); and 3) gear switching does not constrain trawl harvest of non-sablefish species and trawlers do not change their species mixes in response to increased sablefish quota (results not included in the report, but presented to the subcommittee on October 24, 2023). In general, this approach is a potentially effective way to compare the changes in revenue and attainment. However, information on the probabilities of

each of the three assumptions must be provided for decision makers to understand the expected outcomes. The analysis is unable to provide these probabilities.

### *Subcommittee Discussion Points*

The summary of the vessel-level distribution of net revenue per pound of sablefish by vessel type (section 2.4.5(b)) raises questions that may warrant future investigation. A substantial portion of trawlers can generate a higher revenue per pound of sablefish than gear switchers, which seems to indicate that they could outbid gear switchers for quota pounds. There are at least two potential explanations for why these trawlers are choosing not to buy more quota pounds that could be further explored. The first is that the trawlers with higher net revenue per pound of sablefish than gear switchers do not have capacity to increase landings, are limited by accumulation constraints, or have other more lucrative alternatives. It would be useful to evaluate whether the more profitable trawlers (say in the 50th percentile of profitability) appear to have capacity to increase landings and associated use of sablefish quota pounds. A second rationale is that additional Dover sole will receive a much lower price because it will be sold as frozen product and that trawlers no longer have a profitability advantage over gear switchers on incremental catch at the lower ex-vessel price. It might be useful to identify the Dover sole price at which trawlers would no longer have higher net revenue per pound of sablefish than gear switchers and see how that relates to prices paid in the past for Dover sole going to frozen markets. This could be done using Economic Data Collection (EDC) data looking at past years retrospectively to estimate this break-even price assuming other species' prices, costs, and catch rates remain constant in those years.

In discussing the content of the report, the ESC suggested that some of the information presented could be evidence for or against specific hypotheses. While these results may be suggestive in some cases, the analysis on balance is inconclusive and the subcommittee recommends against using the analysis as support for any particular decision.

- The analysis was inconclusive but presents some evidence to support the conclusion that vessel and processing capacity were probably not constraining attainment.
- There is some evidence that market limits led to lower prices for fish destined for frozen fish markets during periods of high Dover sole landings in 2009 and 2010, suggesting that market limits could be a factor in limiting attainment.
- There is some analysis that suggests that some trawlers may be limited by accumulation limits and that some gear switchers that are crossing over from the primary sablefish fishery may be doing so because they are not able to stack additional permits. Both of these suggest management constraints could be a factor in non-attainment.

### *Recommendations for Future Analysis*

It is likely that in the future, sablefish catch limits will increase substantially. Acceptable biological catches (ABCs) for sablefish in 2025 and 2026 will be increasing more than four-fold and annual catch limits (ACLs) in 2023 and 2024 have already been increased from prior years. This provides an opportunity to observe outcomes when sablefish quota pounds are not constraining. Monitoring attainment of non-sablefish species and catch composition of trawl

vessels could provide information on whether gear switching constrains trawl harvest of non-sablefish species.

One critical issue for assessing the effect of increasing sablefish quota pounds (QP) on attainment of other species is whether additional Dover sole landings would receive current prices.

Future analysis should be oriented towards devising specific tests of the hypothesis that gear switching limits attainment of non-sablefish species. The analysis should be organized such that specific results support or refute this hypothesis.

### *Appendix 1*

#### *SSC Economics Subcommittee Members Present*

Dr. Chris Free, University of California Santa Barbara, Santa Barbara, CA

Dr. Michael Hinton, San Diego, CA

Dr. Dan Holland (SSC Chair), National Marine Fisheries Service Northwest Fisheries Science Center, Seattle, WA

Dr. André Punt, University of Washington, Seattle, WA

Dr. Matthew Reimer, University of California Davis, Davis, CA

Dr. Cameron Speir (SSC Economics Subcommittee Chair), National Marine Fisheries Service Southwest Fisheries Science Center, Santa Cruz, CA