

GROUND FISH MANAGEMENT TEAM REPORT ON SABLEFISH/LINGCOD IFQ DISCARD SURVIVAL CREDITS: SCOPING

At our January 2017 meeting, the Groundfish Management Team (GMT) reviewed the most recent information on sablefish and lingcod discard mortality rates, and found no evidence to support changing the current rates of 50 percent for trawl caught sablefish and lingcod, 20 percent for fixed gear caught sablefish, and 7 percent for fixed gear caught lingcod ([Agenda Item F.3.a, GMT Report 1, March 2017](#)). These discard mortality rates are currently used by the West Coast Groundfish Observer Program (WCGOP) to estimate sablefish and lingcod total mortality, and are used in current stock assessments. However, the Shorebased Individual Fishing Quota (IFQ) program uses a 100 percent mortality rate for sablefish and lingcod discards, regardless of survival or gear, and deducts that amount from vessel quota pound (QP) accounts (per actions taken under Amendment 20) with no QP post-season adjustment.

Per the omnibus prioritization process ([Agenda Item C.8., Attachment 3, June 2017](#)), one of the items that the Council selected for further consideration (Number 63) was to examine allowing IFQ fisheries to utilize discard survival credits for both sablefish and lingcod. Under this agenda item, the Council is tasked with scoping issues for applying sablefish and lingcod discard survival credits to QP in vessel accounts, and provide guidance on future analyses and schedule.

The GMT provides the following comments and recommendations for Council consideration.

Purpose and Need

The GMT reviewed the proposed purpose and need in [Agenda Item F.3., Attachment 1, June 2017](#) and offers the following alternative statement for Council consideration:

The purpose of this action is to provide IFQ participants with discard survival credits for lingcod and sablefish to better meet some of the objectives of the IFQ program, and align discard mortality rates with those used in year-end catch accounting. The need is to increase attainment of co-occurring target species, and increase marketability and value of retained catch by eliminating the need to retain small fish that are not economically marketable, or desirable.

Policy considerations in relation to IFQ program goals

There are policy trade-offs for the Council to consider in relation to the Amendment 20 program goals. When the catch shares program was developed, one of the main objectives was to reduce discards and associated mortality ([Objective 3, Pacific Coast Limited Entry Trawl Fishery FEIS](#)). Allowing survival credits for these species in the IFQ fishery would likely increase discards, and be counter to that objective (e.g., trawl discards of sablefish were reduced from 5-15 percent before IFQ to one percent or less thereafter; Appendix).

On the other hand, allowing use of discard mortality rates less than 100 percent could help better achieve some of the other IFQ program objectives such as increased attainments of IFQ stocks (e.g., survival credits of sablefish could increase access to Dover sole and thornyheads) as well as increasing the value of IFQ stocks (i.e., due to higher landings and/or highgrading to obtain higher value fish; [Objectives 2, 5, 6, Pacific Coast Limited Entry Trawl Fishery FEIS](#)).

Risks to Annual Catch Limits

The GMT does not believe that allowing IFQ accounts holders to use lower discard mortality rates would result in significantly greater risk to the annual catch limit (ACL) for either species because account holders would still be held to individual vessel limits. However, there would be some increase in risk compared to the current system that applies the discard rates at the end of the season, resulting in only a fraction of the discards being counted against the ACL.

Conservation concerns

While the GMT believes the discard mortality rates used by the WCGOP and proposed for use in management are the best available science, there are inherent uncertainties with any discard mortality rate. If true discard mortality rates are higher than those currently used and recommended by the GMT, then the actual annual mortality could be higher than the sustainability reference points (e.g., ACL, ABC, OFL) used to manage the stocks. The magnitude and consequences of misestimating mortality rates are difficult to project (e.g., underestimates of fishing mortality could influence natural mortality in assessments), and would likely be better described by the Scientific and Statistical Committee (SSC).

Further, there may be increased discarding of smaller fish (Tables 1 and 2), which could increase the total number of fish removed for a set poundage. For example, ten pounds of sablefish could be removed as one trawl harvested fish or as four smaller fish at five lbs each (assuming two fish die, or 50 percent mortality). Additionally, there has been a decrease in the size of sablefish and lingcod discarded since the IFQ program as shown in *Figure 1* and *Figure 2*. Prior to the IFQ program, both species were managed by trip limits which would force vessels to discard when a limit was reached, no matter the size of the fish; therefore, there were incentives to highgrade. With the IFQ program, vessels are debited for every fish and therefore chose to land and sell smaller fish, even at a lower price. If discard mortality rates are implemented, vessels may choose to highgrade to land higher value fish. This could increase the exploitation rate, as well as reduce spawning potential, since more fish would be removed prior to maturity. Again, the SSC would likely be better able to comment on the impact of this to the stocks.

In conclusion, there is potential for negative biological impacts which would benefit from additional analysis and review by the SSC. At current discard levels (i.e., 10-20 mt per year), the consequences of getting it completely wrong (e.g., 100 percent truly die but debited 50 percent) may not be high given that the vast majority of removals are from retention rather than discards.

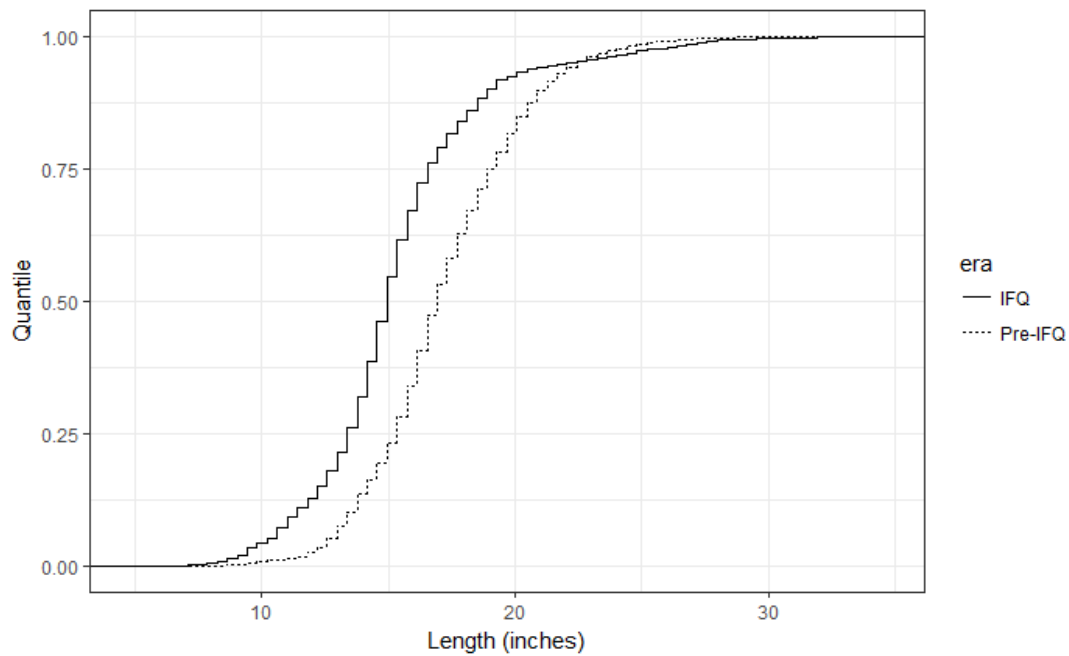


Figure 1: Lengths of sablefish discards before and during the IFQ program. Note the shift to smaller fish after IFQ.

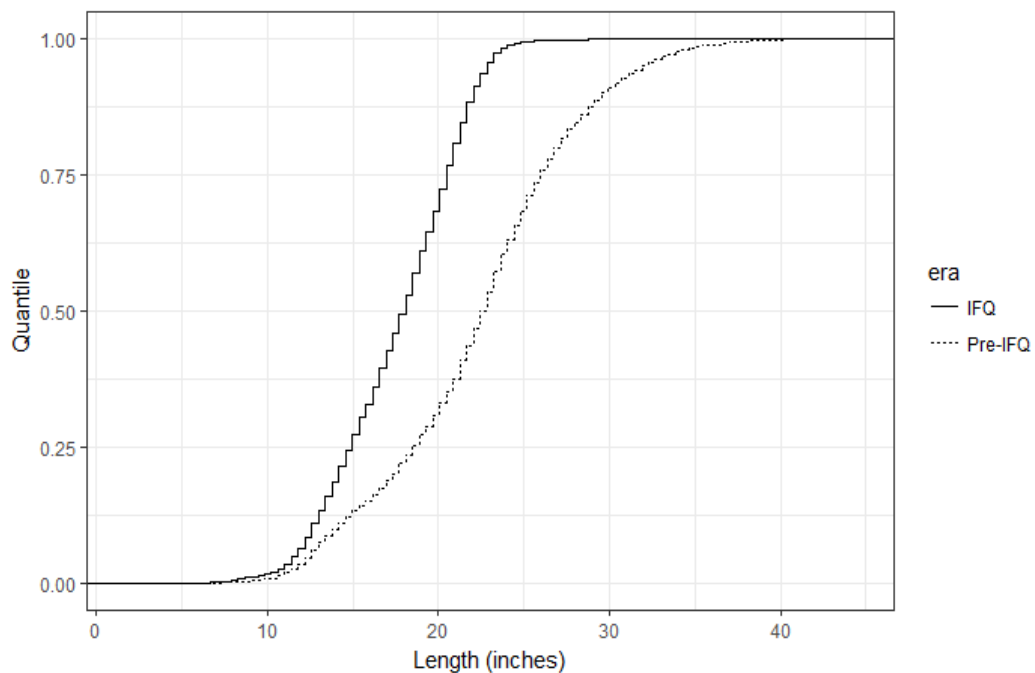


Figure 2: Lengths of lingcod discards before and after the IFQ program. Note the shift to smaller fish. Discards of large lingcod of marketable size before IFQ presumably due to situations where trip limits had been reached and thus catches had to be discarded.

Preliminary Analysis of Benefits

The GMT did a preliminary analysis on the potential benefits of implementing discard mortality rates for sablefish and lingcod in the IFQ sector. Greater potential benefits would be expected for sablefish than lingcod, with sablefish a much higher attainment stock.

To analyze potential benefits to the trawl sector for sablefish survival credits, the GMT utilized the analysis conducted by Dr. Lisa Pfeiffer in the catch share review in which potential increases in Dover sole and thornyheads catch that could be obtained with addition trawl sablefish ([Agenda Item F.2.a, Catch Shares Analysis, June 2017](#)) were evaluated. *Table 1* below shows the potential additional catch of Dover sole, longspine thornyhead, and shortspine thornyheads based on (1) pre-IFQ and IFQ bycatch rates and (2) average and maximum discard of sablefish from the IFQ era assuming the 50 percent discard mortality rate for trawl caught sablefish. As shown, the largest potential increase would be to catch of Dover sole, following by smaller increases of thornyheads.

Table 1: Potential increase in landings of Dover sole, longspine thornyhead, and shortspine thornyhead based on bycatch ratios to sablefish.

Sablefish Discards	Bycatch ratio	Dover Sole	Longspine Thornyhead	Shortspine Thornyhead
Average	Pre-IFQ	75.79	9.53	7.98
Max		139.54	17.54	14.69
Average	IFQ	109.69	13.96	11.08
Max		201.96	25.70	20.40

For sablefish caught with fixed gear IFQ, the potential increased value associated with using survival credits to highgrade could be roughly \$150,000 in ex-vessel revenue per year. This was computed by taking 80 percent (since proposed of recent IFQ fixed gear discards is 20 percent) of recent higher end discards (used 20 mt) and applying the \$4 price per pound of large grade fixed gear caught sablefish. The value could be higher if the fleet highgrade the smaller fish that they currently retain, worth less than \$3 per pound, to higher value larger grades. There is incentive for this, since the cost of discarding small fish (i.e., \$0.50 per pound = 20% loss of these ~\$2.50 per pound fish to discard mortality) would be three times less than the potential gain (\$1.50 in additional price per pound by converting the small fish to larger \$4 per pound fish).

For lingcod, the GMT believes that there may be limited benefits to survival credits for lingcod under the current minimum size restriction (22 inches in WA/OR, 24 inches in CA). As shown in *Figure 2* above, almost all the lingcod that were discarded since 2011 were under 23 inches. It is the GMT's understanding that industry wants to discard these smaller fish since they have limited or no market value to processors. The GMT therefore thinks that the trawl lingcod minimum size limit may be unnecessary since markets impose a de facto size limit comparable to what is in regulation. The GMT notes that removing the size limit would be an available action under

inseason as a routine management measure since it has been previously analyzed. In addition, as shown in Table 3-16 in [Agenda Item F.2.a, Catch Shares Analysis, June 2017](#), only six vessel accounts since 2011 have used more than 90 percent of their annual limit. Therefore, even if vessels were able to apply the lower discard mortality rates, there may be few participants that benefit from it, especially if yelloweye rockfish constraints remain in effect.

Timeline for implementation and required analysis

As currently slated on the draft Year at a Glance ([Agenda Item C.8. Attachment 1, June 2017](#)), the Council is scheduled to select a Range of Alternatives (ROA) and a Preliminary Preferred Alternative (PPA) in September 2017 and a Final Preferred Alternative (FPA) in November 2017. If the FPA is selected in November, then the idea was that survival credits could then be used for the start of 2018. However, the GMT discussed potential complications with this initial proposed timeline.

1. Application of Credits: Even if the Council were to select an FPA in November, the GMT believes that it may be impossible to get the analysis, rulemaking, and Vessel Account System upgrades completed for an implementation date of January 1, 2018. The GMT believes that there may be potential issues with QP accounting in vessel accounts mid-year should implementation be delayed.
2. Disposition of Discards: While the current scope includes either 100 percent discard mortality, or the GMT reviewed discard mortality rates described above, the GMT notes that there is no discussion on the disposition of the discards and whether the gear specific discard mortality rates would be applied. For example, if a sablefish or lingcod was dead and discarded, would the vessel still receive the survival credit, or would mortality be debited at 100 percent? The Council could consider a similar process to that used for Pacific halibut discards, in which the disposition observed informs the discard mortality rate used; however, there are ongoing discussions on the application and complexity of this approach using electronic monitoring that would need to be considered.
3. Projections of Attainment: The 2017-2018 harvest specifications did not take into account the use of discard mortality rates for sablefish and lingcod. Therefore, if the discard mortality rates were approved for use in 2018, the projections and subsequent rulemaking may not fully detail the impacts on these two stocks, or co-occurring stocks. With survival credits, vessels may be able to keep fishing longer and increase attainment of certain stocks.

Therefore, the GMT recommends the Council consider the preliminary analysis presented above and if the Council moves forward with prioritizing this agenda item, analysis of impacts and implementation be included in the 2019-2020 harvest specifications analysis.

Appendix:

Sablefish and lingcod catch (landed + discards), discards (not discard mortality), and discards rates before and after trawl rationalization (from Somers et al. 2016 [\(1\)](#) and [\(2\)](#)).

	<i>IFQ ERA (source 1)</i>					LE TRAWL ERA (source 2)				
<i>SABLEFISH</i>	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
IFQ/LE bottom trawl catch	1404.6	1295.5	1404.5	1449.3	1674.4	564.3	780.6	664.5	515.0	535.3
IFQ/LE bottom trawl discard	10.9	20.4	7.4	7.5	9.2	84.3	79.9	36.7	62.0	66.6
IFQ/LE bottom trawl discard rate	0.8%	1.6%	0.5%	0.5%	0.5%	14.9%	10.2%	5.5%	12.0%	12.4%
IFQ hook-and-line catch	125.6	77.3	75.6	214.1	312.6	---	---	---	---	---
IFQ hook-and-line discard	5.1	2.5	2.8	8.6	8.0	---	---	---	---	---
IFQ hook-and-line discard rate	4.1%	3.2%	3.7%	4.0%	2.5%	---	---	---	---	---
IFQ pot catch	406.9	688.2	458.4	741.7	818.4	---	---	---	---	---
IFQ pot discard	7.4	10.2	8.7	12.3	11.7	---	---	---	---	---
IFQ pot discard rate	1.8%	1.5%	1.9%	1.7%	1.4%	---	---	---	---	---

<i>LINGCOD</i>	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
IFQ bottom trawl catch	194.9	240.6	344.4	371.0	280.1	14.0	55.2	35.6	39.3	77.6
IFQ bottom trawl discard	24.7	21.6	23.4	29.4	39.1	3.1	32.2	14.9	20.7	57.4
IFQ bottom trawl discard rate	12.7%	9.0%	6.8%	7.9%	14.0%	21.9%	58.4%	41.7%	52.7%	73.9%
IFQ hook-and-line catch	1.2	0.3	0.3	0.2	0.4	---	---	---	---	---
IFQ hook-and-line discard	0.0	0.0	0.0	0.0	0.1	---	---	---	---	---
IFQ hook-and-line discard rate	1.0%	7.5%	10.9%	22.8%	14.3%	---	---	---	---	---
IFQ pot catch	3.8	1.5	2.6	2.2	3.0	---	---	---	---	---
IFQ pot discard	0.0	0.1	0.3	0.0	0.1	---	---	---	---	---
IFQ pot discard rate	0.0%	7.1%	10.3%	0.7%	2.9%	---	---	---	---	---